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September 20, 2002

Council on Environmental Quality
NEPA Task Force
P.O. Box 221150
Salt Lake City, UT 84122

Dear Sirs:

RE: CEQ request for comments on the National Environmental Policy Act Task Force [Federal Register: July 9, 2002 (Volume 67, Number 131)] [Notices] [Page 45510-45512].

Thank you for the opportunity to comment on the NEPA Task Force seeking ways to improve and modernize National Environmental Policy Act (NEPA) analyses and documentation and to foster improved coordination among all levels of government and the public. The California Forestry Association (CFA) would like to express our sincere appreciation and compliment the Council on Environmental Quality (CEQ) for establishing the NEPA Task Force and providing the NEPA Task Force with a wide-ranging mandate that begins with the direction "to seek ways to improve and modernize NEPA analyses and documentation."

CFA is a non-profit trade association whose members include professional natural-resource managers, forest landowners, and manufacturers and producers of wood products and biomass energy. Our members are committed to environmentally sound resource policies, responsible forestry and the sustainable use of natural resources. They also manage their lands to provide habitat for numerous wildlife and fish species, as well as recreational opportunities for thousands of forest visitors. We have been involved with NEPA analyses, documents, appeals and litigation since the inception of the original Act. We think your efforts are long overdue. We strongly agree that the federal agencies' planning and decision-making processes using NEPA can obtain higher levels of efficiency.

We have come a long way since the passage of the NEPA Act and Regulations. General federal agency implementation originally had a simple, clear, early message concerning the purpose of NEPA. That articulated as one of "fostering excellence in decisions, not excellence in paper work." Now the focus for the agencies is one of making sure they develop "bulletproof documents" as they develop their programs and projects. Given the complexity of CEQ rules and

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regulations, agency rules and regulations, and diffused authorities between agencies, there is little wonder why a federal agency such as the USDA Forest Service is tied up in process gridlock.[1]

A significant percentage of the process gridlock and perhaps most of the NEPA lawsuits have been based on alleged violations of CEQ's regulations. The simple facts are that CEQ regulations present abundant opportunities for lawsuits. Numerous litigation targets are established – elaborate procedures (*e.g.*, multiple public comment opportunities); requirements for additional documentation (*e.g.*, Environmental Assessments (EAs) and Findings of No Significant Impacts (FONSIs)); and expansive but vague analytical requirements (*e.g.*, the content, and geographical and temporal scope of analyses of cumulative impacts, connected actions and indirect effects).

When the CEQ has attempted to reduce complexities or ambiguities arising from case law or its own regulations, it typically has done so through guidance documents (*e.g.*, "Forty Most Asked Questions," 46 Fed. Reg. 18026 (1981); "Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under NEPA" (1993); and "Considering Cumulative Effects Under The National Environmental Policy Act" (1997)). These documents, however, lack the force and effect of law and have been virtually ignored by the courts.

Public comments are becoming almost meaningless.

Recommendations:

Suggestions for Programmatic EISs

- At a minimum, programmatic EISs should be prepared only on those programs which the courts recognize as federal actions subject to judicial review. CEQ should excuse from NEPA "programmatic" documentation pre-decisional planning or other documents that cover such broad geographical areas and so many unknown projects as to be unsusceptible or poorly susceptible to NEPA-related environmental analysis.

- At a minimum, the CEQ should require that agencies develop (subject to CEQ approval) NEPA compliance strategies that result in a maximum of one layer of "programmatic" NEPA compliance above the project level.

Suggestions for Tiering

- As recommended above, to make tiering both acceptable and workable, the CEQ should require that no more than two NEPA documents be prepared for or applicable to any federal project or other agency action.

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[1] Statement of Dale Bosworth Chief, USDA Forest Service to the Subcommittee on Forests and Forest Health, Committee on Resources, U.S. House of Representatives, Washington, D.C. June 12, 2002

- CEQ should require that the EA for any project subject to a programmatic NEPA document not be a stand-alone document or repeat any analysis from the programmatic NEPA document.

- CEQ should insist that the programmatic NEPA document be considered timely for tiering purposes for a significant period after its completion. At a minimum, CEQ should establish a strong presumption of timeliness, with a heavy burden of proof to show that a programmatic NEPA document is too outdated to permit tiering.

EIS Contents

Increasingly EISs – programmatic or project are encyclopedic and prohibitively costly to prepare, but in many cases do not withstand judicial scrutiny. CEQ has only provided very vague and open-ended analytical requirements in rules and guidance. These are largely problems of CEQ's own making. Those who are tasked with preparing the EIS are left with virtually no guidance on the critical decision of "where to stop" in the analysis of effects.

- CEQ should consider eliminating the required analyses of "connected actions" and "cumulative effects."
- The CEQ should also address the geographical scope of the effects analysis in NEPA documents.

Environmental Assessments

We question whether NEPA requires the preparation of EAs. We recognize that a mechanism must be in place to determine whether an agency action is a "major Federal action[] significantly affecting the quality of the human environment" and thus requires preparation of an EIS under NEPA § 102(2)(C). At most, that mechanism could be a FONSI that looks solely at the impacts of the proposed agency action and not to alternatives to the action.

If CEQ determines that EAs should be maintained as a NEPA compliance tool, then the following are recommended:

- New simplified requirements for the contents of project EAs should be developed by CEQ to ensure that EAs are not, as they now are, "detailed statements" which are required only for EISs on major federal actions under § 102(2)(C).

- CEQ should develop new requirements for EAs that differ fundamentally in organization and contents from the requirements for EISs (rather than simply

repeat the requirements of an EIS for an EA, qualified only by the increasingly meaningless wording "brief discussions of," 40 C.F.R. § 1508.9(b)).

- Rules and guidance should contain explicit statements that certain analyses are appropriate only for EISs and are not to be conducted for or included in EAs.

EAs have been subjected to more than just excessive paperwork; they also have become immersed in excessive procedures. We question whether any public comment is required for EAs, particularly when its not required for EISs by NEPA or for EAs by CEQ's rules. Indeed, CEQ's regulations simply direct the agency proposing the action to include the public "to the extent practicable" during EA preparation. 40 C.F.R. § 1501.4(b).

- CEQ should provide rules and guidance that EA's need only be made available to the public.

- CEQ also should set criteria for the "convincing statement of reasons" why no EIS is required that the Ninth Circuit requires of a FONSI. The present CEQ guidance – "briefly describing the reasons why an action ... will not have a significant effect on the human environment and for which an [EIS] will not be prepared" – is apparently insufficient for at least some courts. 40 C.F.R. § 1508.13.

- CEQ should provide complete direction on the full contents of FONSIs.

In order to grasp the magnitude of the use of EAs, the USDA Forest Service is an excellent example since they represents the largest producer of EA's in the federal government. The USFS writes about 4,000 to 5,000 environmental assessments annually. Approximately one-half are associated with timber sales. The Office of Inspector General completed a comprehensive review of their use by the USFS in 1999.[2] Their entire report is appended to our comments and should be reviewed by the NEPA Task Force. All of the conclusions reflect a review of agency performance against basic CEQ regulations and the ability of USFS in their attempts to comply with CEQ regulations. The conclusions in this report are especially insightful given that the Office of Inspector General simply evaluates the agency performance against their own government regulations and agency rules. Careful evaluation by the NEPA Task Force of their report will provide valuable insight into actual performance problems in developing environmental documents. The OIG report and conclusions support the need for change in regulations or agency performance, or perhaps both.

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[2] U.S. Department of Agriculture Office of Inspector General Evaluation Report. Forest Service Timber Sale Environmental Analysis Requirements. Washington, D.C. Evaluation Report No. 08801-10-At January 1999.

Time Limits

- CEQ should provide rules and guidance to set general time limits for NEPA document preparation either by category of document (*e.g.*, programmatic EIS, project EIS, programmatic EA, project EA, tiered EA, etc.) or by type of action.

Emergencies

- CEQ should develop a better process for determining when circumstances are "emergencies" and selecting the "alternative arrangements" for NEPA compliance for the responsive federal actions. 40 C.F.R. § 1506.11. The present emergency provision of the CEQ regulations is so unwieldy as to be virtually useless – every decision under it is made individually and with no guiding criteria or templates.

- CEQ's emergency provision should be broadened to include any circumstances where delay would result in failure to respond in a timely manner to adverse environmental **or economic** consequences resulting from fire, windstorms, disease or insect infestations or other natural causes.

Categorical Exclusions

- CEQ should reconsider fully the "kick out" criteria and develop a narrower set of criteria for excluding categorical exclusions based solely on science and the expected level or degree of adverse effects. In particular, CEQ should eliminate the confusing references to "controversial."

- CEQ should consider developing a set of criteria – a checklist that is not subjective – for agencies to determine whether an action or class of actions is eligible for categorical exclusion.

New Information—Supplemental Documents

The continuing duty to supplement environmental documents for "new information" both during and after the original NEPA process, slows the process and disrupts implementation of approved actions.

After an EIS is complete, the CEQ regulations require a supplement to the EIS when there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. 40 C.F.R. § 1502.9. The courts have held that there is a "continuing" duty to respond to new information to determine if a supplemental EIS required. Idaho Sporting Congress v. Alexander, 222 F.3d 562, 566 (9th Cir. 2000). When the new information addresses a wide-ranging wildlife species such as the salmon or goshawk, supplements to hundreds of environmental documents can be required.

Supplementation has also been extended to EAs, even though there is no regulatory requirement for such supplementation. Even though supplemental EAs are not specifically required by the regulations, agencies have prepared supplements to EAs. Because EAs are not required by the statute and EA supplements are not required by the regulations, it makes sense to clarify that there is no requirement for a supplemental EA.

- CEQ should tighten the definition of "new information" that requires a supplemental EIS, and define the circumstances when an ongoing project or program must be halted until a supplemental EIS is completed.

- The CEQ Regulations should be amended to create a two-step process for agencies to decide whether to prepare a supplemental EIS for an ongoing project or program. First, the regulations should establish a reliability threshold for new information, so that agencies are not continually forced to consume time and resources reviewing unreliable or unimportant information, and so that courts cannot interminably delay projects or programs to force an agency to do so.
- The regulations should require an agency to prepare a supplemental EIS on a project or program only if the agency makes three findings:

  1) the new information presents clear evidence that the project or program is likely to have materially more harmful effects on the environment than disclosed in the original EIS for the project or program;

  2) the agency lacks the authority to modify the project or program to substantially mitigate for the newly-disclosed effects unless it prepares a supplemental EIS; and

  3) the value of the supplemental EIS is likely to exceed the cost of preparing the document.
- The regulations should provide that when an agency decides a supplemental EIS should be prepared on an ongoing project or program, the agency must halt an activity that is part of the project or program until the supplemental EIS is completed only if the agency finds:

  1) the activity is likely to cause serious and irreparable environmental harm before the supplemental EIS is completed; and

  2) 2) it would not be more cost effective to mitigate any such harm through other means. The regulations should provide that only specific activities meeting these two criteria shall be halted, and other ongoing portions of a project or program may continue at the discretion of the agency.

Best Science and Information Quality Act

In a related topic, agencies are always expounding on the use of "best science," especially when they are defending their NEPA documents. But sometimes the

best science gets convoluted in NEPA documents as pointed out by Stevens in his careful review of recent court decision on misuse of science.[3] His concerns are exemplified by the Office of Management and Budget as expressed in the article by Stevens. *"The Office of Management and Budget (OMB) has recently issued new federal guidelines under the Information Quality Act, Public Law 106-554 (2000), to ensure that federal agencies disseminate and utilize better quality scientific data. 67 Fed. Reg. 369 (Jan. 3, 2002). By October 1, 2002 all federal agencies must issue their own guidelines or adopt those of OMB. Id. Among other points, the OMB Guidelines require the use of the "best available science" and sound statistical methods in developing data. Id. at 373. Under the Act, agencies must correct information that does not comply with the Guidelines, and an agency's failure to do so could be challenged in court. See OMB Guidelines on Quality of Information Seen as Having Profound Impact on Agencies, DAILY ENVT. REP. (BNA), Jan. 14, 2002; EPA Proposed Guidance on Data Quality Draws Fire From Industry, Advocacy Groups, DAILY ENVT. REP. (BNA), June 24, 2002. This Act and the OMB Guidelines could be potentially significant in the effort to ensure the integrity of agency science."*

The NEPA Task Force must carefully evaluate the implications of data quality and use of science or other information in light of the OBM guidelines.

Relationships with other Federal Requirements

Federal agencies must coordinate with a myriad of federal laws and regulations in their environmental documents. A specific example is the Threatened and Endangered Species (TES) Act and National Forest Management Act (NFMA). Consultation with USFWS under TES considerations generally requires a Biological Evaluation (BE) for the preferred alternative of the EIS. BEs are not required for the remainder of the alternatives considered. Under NFMA, the Forest Service is required to display "viability" effects for forest planning considerations for each alternative considered. USFS forest planning decision-makers do not have a full display of the consequences of each alternative from the TES perspective, only the "viability" consequences under NFMA. Both are frequently dealing with the same basic considerations and may be redundant. Agency personnel could probably develop extensive examples of similar NEPA coordination problems. In order to evaluate effective recommendations for CEQ regulations, the task force must look into these kinds of problems and develop effective CEQ regs or recommendations for consideration by the affected agency(ies).

Examples of best practices

The request for comments asked for examples of case studies for "best practices." We strongly believe the Task Force must **not** consider examples offered by agencies or individuals resulting from EAs or EISs that have not been

[3] Steven, Gary. Faulty Agency Science Undermines Management of Natural Resources. Legal Backgrounder. Washington Legal Foundation. Washington, D.C. Vol. 17, No. 29, July 26, 2002.

appealed or litigated. Using documents that have not been evaluated under the rigors of administrative appeals and/or lawsuits will be very misleading. Consider the years and experience of developing NEPA documents without appeal or litigation compared to those developed under the threat or crucible of appeals and lawsuits.

Notice of Intent (NOI)

Filing of a NOI to prepare an environmental impact statement has taken entirely too long. This may simply be an agency problem and not necessarily associated with CEQ or the regulations. As an example within the U.S. Forest Service, filing of NOIs for salvage timber sales or restoration of burned areas has taken more than six months. Field personnel state that they have to develop very explicit proposals with details that explain to the public exactly what the agency is proposing, or the NOI will not clear through Washington staff or their Office of General Council review. Lengthy delays in producing a simple Federal Register NOI is symptomatic of a bigger problem. Federal agencies are trying to develop bulletproof documents in each and every step of the process to withstand the ultimate legal challenges they know will halt or delay implementing projects. The logic from the NOI down the line to FEIS and ROD is to make sure that everything in the NEPA documents meet every word in he CEQ Reg's or agency guidelines, or you will be sued and lose.

This brings us back to our opening comments concerning the original agency implementation purpose of NEPA as "fostering excellence in decisions, not excellence in paper work." Now the purpose appears to have changed, and evolved into one of fostering legally bulletproof documents and process regardless of the decision. We sincerely hope the task force and CEQ leadership carefully reviews and evaluates each and every one of the current regulations, case law, and the analysis paralysis facing federal agencies today. Changes are needed, and we highly commend CEQ for establishing the task force and look forward to commenting on their proposed or recommended changes.

Sincerely,

Philip S. Aune
Vice President, Public Resources

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U.S. Department of Agriculture
Office of Inspector General
Evaluation Report

Forest Service
Timber Sale Environmental Analysis Requirements
Washington, D.C.

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Evaluation Report
No. 08801-10-At
January 1999

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UNITED STATES DEPARTMENT OF AGRICULTURE

OFFICE OF INSPECTOR GENERAL

Washington D.C. 20250

DATE: January 15, 1999

REPLY TO
ATTN OF: 08801-10-At

SUBJECT: Forest Service - Timber Sale Environmental Analysis Requirements

TO: Mike Dombeck
Chief
Forest Service

ATTN: Clyde Thompson
Deputy Chief for Operations

This report presents the results of our evaluation of the Forest Service Timber Sale Environmental Analysis Requirements. The issues and recommendations contained in this report were discussed with members of your staff on September 16, 1998. Where appropriate, we included their suggested changes in the final report. The report reflects numerous serious deficiencies in Forest Service's environmental analyses which jeopardize the integrity of that process. Immediate corrective action is needed to ensure that the interests of environmental, logging, and other groups are safeguarded.

In accordance with Departmental Regulation 1720-1, please furnish a reply within 60 days describing the corrective action taken or planned and the timeframes for implementation for each recommendation so that a management decision can be reached. Please note that the regulation requires a management decision to be reached on all conclusions and recommendations within a maximum of 6 months from report issuance. Follow your internal agency procedures in forwarding final action correspondence to the Office of the Chief Financial Officer.

We appreciate the cooperation and assistance provided by your staff during the evaluation.

ROGER C. VIADERO
Inspector General

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CHAPTER 1 - EXECUTIVE SUMMARY

Results in Brief

Forest Service's administrative controls over the preparation of environmental documents and implementation of mitigation measures applicable to timber sales have not been effective. Therefore, Forest Service's decisions regarding various environmental issues were not always based on adequate research and analyses. Specifically, environmental studies and related documents that were used to support the decisions contained deficiencies, omissions, and inadequate descriptions of the analyses performed. Forest Service did not ensure integrity in the preparation of its environmental documents, and consequently permitted timber sales and other activities without limiting the environmental damage associated with those activities.

Deficiencies in environmental documents and analyses have many consequences. Officials cannot rely on these documents to provide assurance that the Forest Service is complying with all environmental laws. Taxpayers and timber purchasers suffer when errors and omissions come to light and cause the Forest Service to cancel or modify previously approved timber sales. Future generations and the natural environment also suffer when Forest Service employees overlook sensitive resource issues and do not adequately protect heritage resources, water quality, and threatened, endangered, or sensitive species and their habitat. Finally, the Forest Service's credibility suffers when promises, in the form of mitigation measures, are not kept and the published position of the agency conflicts with on-the-ground reality.

The Forest Service writes about 4,000 to 5,000 environmental assessments annually. Approximately one-half are associated with timber sales. This report contains the results of our review of 12 environmental assessments, associated environmental documents, and timber sale contracts.

Mitigation measures contained in 10 of the 12 environmental assessments reviewed, were not always implemented. In addition, mitigation measures were either omitted or incorrectly incorporated into 4 of 12 accompanying timber sale contracts. These measures are designed to reduce the adverse impacts of timber sale activities on the environment. Generally, mitigation measures were not implemented because district personnel were not familiar with the measures contained in the environmental documents, did not adequately monitor the actual implementation, or did not compare timber sale contracts with the environmental documents. When mitigation measures are not properly implemented, streams, wildlife habitat, heritage resources, water quality, and visual quality can be adversely affected. In some instances, we found evidence that deterioration of the environment had occurred.

In 3 of the 12 environmental assessments and decision notices reviewed, timber sale contracts authorized the harvest of more acres or trees than specified. This occurred because the Forest Service viewed approved acres and trees more as a planning guideline than a limitation on harvesting. However, this view resulted in the harvest of excess trees or acres, which could adversely affect the environment. In one case, the errors resulted in the cancellation of several timber sales and the subsequent payment of about $650,000 to timber purchasers for breach of contract. In addition, noncompliance with public decision documents can undermine the public's confidence in the Forest Service.

During our evaluation, Forest Service officials took immediate action to correct several conditions that could have adversely affected the environment. Specifically, the southern regional forester halted several timber sales after we advised him that surveys for threatened, endangered, and sensitive species had not been performed, and too many trees were being harvested. Some of the timber sales were ultimately canceled. In another region, Forest Service personnel agreed to revise the boundaries of one timber harvest unit after they confirmed

our observation of the presence of a heritage resource site inside the unit. In two other cases, Forest Service officials reconsidered the effects on the environment of a stream protection boundary that was too narrow, and a clearcutting harvest that covered 11 acres more than it should have.

Key Recommendations

We recommend that Forest Service (a) review current methods and direction for preparing and monitoring the implementation of decision notices and the supporting environmental documents and develop an administrative control plan based on the review results, (b) review and modify as necessary the Washington Office's oversight process to ensure accountability in the area of environmental analysis, and (c) report the environmental analysis and implementation monitoring process as a material weakness in the Department's Federal Manager's Financial Integrity Act (FMFIA) report.

Agency Position

On September 16, 1998, we discussed proposed issues and recommendations with the Acting Associate Deputy Chief for National Forest System and members of his staff. The Forest Service generally agreed with the issues and recommendations presented. During this discussion, Forest Service personnel stated that they needed to revisit the direction that was in place for preparing, supporting, and implementing environmental documents. Forest Service personnel also offered some suggestions for changes to the conclusions and recommendations. Where appropriate, we incorporated the suggested revisions into the final report.

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CHAPTER 2 - INTRODUCTION

Background

The Forest Service timber sale program is a large and highly complex undertaking. In fiscal year (FY) 1997, it provided nearly 3.3 billion board feet of timber to help meet the Nation's needs for wood fiber for which the Forest Service received about $490 million. As might be expected with a program of such scope and complexity, the timber sale activities have, for many years, come under public scrutiny. In recent years, the spotlight of public attention has been focused on such issues as the effect of national forest timber sales on threatened, endangered, and sensitive species (e.g., Northern Spotted Owl, etc.) and biological diversity. While it is difficult to tell what the results of those concerns ultimately will be, it is apparent that related events have already had an impact on the timber sale program. For example, a Federal District Court granted an injunction to suspend various timber sales based on the lack of an adequate survey for sensitive species of plants and animals.

Within the Forest Service, the term environmental analysis usually refers to the process of performing analysis in compliance with the National Environmental Policy Act (NEPA), and in the case of programmatic Land and Resource Management Plans, the National Forest Management Act (NFMA). The processes for complying with these Acts are contained in Forest Service Manual and Handbook, Title 1900. The end products are documents which contain the analysis and subsequent decisions. Environmental analysis is also required for compliance with many other resource protection Acts, including the Endangered Species Act and the National Historic Preservation Act.

The myriad of Federal (e.g., Endangered Species Act of 1973) and State environmental laws has had a significant impact on the Forest Service timber sale program by greatly expanding the scope of required environmental analyses. In FY 1997, Forest Service spent about $66 million to perform environmental analyses for timber sales. Before committing to a timber sale at a particular site, the Forest Service is now required to analyze virtually every environmental impact that might result from making that sale, and to document in detail, the results of those analyses. There are numerous documents prepared during this process. Several of the key documents developed for a typical timber sale are the environmental assessment, biological evaluation, decision notice, and "Finding of No Significant Impact." A brief description of each follows.

Environmental Assessment - A concise public document that provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement. It is in this document that the various resource analyses (e.g., biological evaluation) are presented describing what was analyzed and how. It also describes and compares the effects on the environment of each resource area for each alternative action (e.g., no action, harvest 20 acres, harvest 50 acres, etc.) studied.

Biological Evaluation - One of many individual resource analyses prepared for the environmental assessment. The purpose of a biological evaluation is to determine whether a timber sale will affect either threatened, endangered, and sensitive species, or their habitat. Each of these species contained either on the regional forester's or national forest's list, should be specifically addressed in the evaluation.

Finding of No Significant Impact - A document that briefly presents the reasons why a timber sale will not have a significant effect on the human environment and for which an environmental impact statement will not be prepared. This document is based on the analyses performed for the environmental assessment. This

document must answer a number of specific questions, including the beneficial and adverse impacts of the sale and the effects of the sale on public health and safety.

Decision Notice - A concise written record of a responsible official's decision (selection of an alternative) based on an environmental assessment and "Finding of No Significant Impact." The purpose is to provide the public with a clear idea as to what the decision is and the rationale behind the decision.

A brief legal history of the NEPA laws, applicable regulations, Forest Service guidance, and an explanation of the steps that a timber sale environmental analysis passes through are presented in exhibit A.

For timber sales, implementation usually refers to the process of implementing the decision made through the analysis process by actions such as marking the timber, preparing contracts and appraisals, selling and harvesting timber, and administration of the timber sale contract. Timber sale implementation is guided by the Forest Service Manual and Handbook, Title 2400.

Objectives

Our objective was to evaluate the Forest Service's implementation of required environmental analyses for selected timber sales and to identify needed improvements. We also followed up on hotline complaint issues, including inadequate biological evaluations and site surveys for threatened, endangered, and sensitive species that were not performed. We accomplished these objectives by (a) determining if the environmental documents contained the required information, (b) verifying that timber sale contract provisions matched those contained in environmental documents, and (c) verifying that on-the-ground actions matched the environmental documents (e.g., mitigation measures).

Scope

Fieldwork was conducted at the Forest Service National Office, 3 of 9 regional offices, 6 of 130 forest supervisor offices, and 6 of 477 ranger district offices (see exhibit B). We reviewed 12 judgmentally selected environmental assessments, associated environmental decision documents and 12 judgmentally selected applicable timber sale contracts. We included additional timber sale activity as needed where the environmental assessment contained more than one timber sale. Forest Service prepares 4,000 to 5,000 environmental assessments annually, of which about one-half are for timber sales. In FY 1997, Forest Service awarded contracts for 232,110 timber sales.

The sites visited were selected based on the hotline complaints, volume of timber harvested, and input from Forest Service officials. We judgmentally selected the timber sales for review with emphasis on large sales which had open (harvesting going on) and closed (harvesting complete) units, and where a variety of timber harvesting methods (e.g., clearcutting, shelterwood, individual tree selection, etc.) were used. We included timber sales cited in hotline complaints and selected the sales regardless of when Forest Service issued that specific decision notice. We used this criteria primarily so we could evaluate whether mitigation measures contained in the environmental documents were being implemented while the timber sale was operating. Our field visits were conducted during FY's 1995 through 1998.

Our evaluation was conducted in accordance with Quality Standards for Inspections as developed by the President's Council on Integrity and Efficiency, dated March 1993. Accordingly, it included such tests of records and other procedures necessary to accomplish the evaluation objectives.

Methodology

Our examination consisted of the following.

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- Researched applicable laws, regulations, and Forest Service guidance pertaining to NEPA documents.
- Interviewed Forest Service national, regional, forest supervisor, and ranger district office personnel about how the NEPA process was implemented for timber sales.
- Interviewed other Federal and State agency personnel concerning Forest Service compliance with applicable laws and regulations.
- Visited three regional offices and six forest supervisor offices to review supplemental instructions and procedures, identify potential problems, and select the districts to be reviewed. The regions and forests were selected for review based on inclusion in hotline complaints, timber harvest volume, and Forest Service input.
- Reviewed timber sale environmental documents for compliance with applicable laws, regulations, and procedures at six ranger districts. The districts were selected based on inclusion in hotline complaints or if there were operating timber sales.
- Verified that conditions specified in the environmental documents were implemented on the ground for the selected timber sales (usually two per district).

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CHAPTER 3 - CONCLUSION NO. 1
ADMINISTRATIVE CONTROLS OVER THE PREPARATION OF ENVIRONMENTAL DOCUMENTS AND IMPLEMENTATION OF MITIGATION MEASURES WERE NOT ADEQUATE

Forest Service's administrative controls over the preparation of environmental documents and implementation of mitigation measures applicable to timber sales have not been effective. Specifically, the (a) integrity of environmental decisions was not maintained, (b) environmental assessments did not include adequate analyses, (c) biological evaluations were incomplete, (d) decision notices did not adequately address required elements, and (e) "Findings of No Significant Impact" were incomplete. Details concerning these deficiencies are presented in Conclusion Nos. 2 through 6 and the associated exhibits E through I. Based on the conditions noted, we concluded that improvements are needed in order to (a) provide the public adequate assurance that the effects of proposed timber sales are properly analyzed, (b) ensure that measures to mitigate any adverse effects on the environment are implemented, and (c) provide timber purchasers assurance that they will be allowed to harvest any timber purchased.

The Forest Service relies on the guidance contained in the Forest Service Handbook 1909.15 and reviews conducted by the Washington, Regional, and Forest Supervisor offices, as the primary administrative controls over the environmental analysis process.

The effects of not properly preparing environmental documents and implementing the included mitigation measures can be material in the following areas:

Environment - The environment can be adversely affected when inadequate analyses are performed to determine the effect of the timber sale on specific resources (e.g., threatened, endangered, and sensitive species) and when mitigation measures are not properly implemented (e.g. not installing the proper number of water bars).

Forest Service's Integrity - Forest Service's integrity may be adversely affected when Forest Service personnel do not do what they told the public they would do (e.g. limit the number of trees cut, implement mitigation measures).

Financial Harm to Timber Purchasers and Taxpayers - Timber purchasers and taxpayers are harmed financially when Forest Service has to modify, cancel or breach contracts with timber purchasers. This evaluation disclosed one case which resulted in Forest Service having to pay timber purchasers about $650,000 to breach timber sale contracts. The General Accounting Office (GAO) recently reported (GAO/RECD-97-71) that as of October 1996, Forest Service had pending claims with potential damages of about $61 million, and it could incur at least an additional $198 million in damages. Some of these claims were due to Forest Service not developing plans in accordance with applicable environmental laws.

During a September 16, 1998, discussion of the issues with the Acting Associate Deputy Chief National Forest System and members of his staff, Forest Service personnel stated that they needed to revisit the direction that was in place for preparing and supporting environmental documents. They further suggested that the method used by the Forest Service to monitor mitigation measure implementation and to hold employees accountable needed to be revisited. They agreed that a detailed review regarding Forest Service's environmental processes associated with timber sales is needed.

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Our review of the FY 1998 FMFIA report disclosed that Forest Service did not report as a material weakness any issues regarding its environmental analyses and implementation monitoring process.

Recommendation No. 1a

Review the current Forest Service methods and direction for preparing and monitoring the implementation of decision notices and the supporting environmental documents. Include the issues identified above and in Conclusion Nos. 2 through 6 in this review.

Recommendation No. 1b

Develop an administrative control plan, based on the results of the review cited in Recommendation No. 1a, to ensure that environmental documents are complete, accurate, and in compliance with applicable laws, and that required mitigation measures are implemented. Ensure that each of the following is addressed in the plan.

- Documentation of critical action in the environmental assessment, biological evaluation, decision notice, and "Findings of No Significant Impact" is complete.
- Routine supervisory reviews of environmental activities are performed.
- The implementation monitoring for mitigation measures is carried out and documented.
- Environmental document and analysis preparers are sufficiently trained.
- A certification program for personnel who are responsible for writing environmental assessments (e.g., interdisciplinary team leader) is developed.
- Communications are improved by sharing critical information between resource specialists (e.g., biologist and timber sale layout person).
- Line officers are held responsible for ensuring that the decision document and its supporting documents (e.g., environmental assessment, biological evaluation, etc.) contain all required components and accurately reflect current knowledge about the environment.
- A format, preferably automated, to prompt analysis of required data elements and a strategy for effectively monitoring compliance with minimum requirements are developed.
- Specific expectations are provided to employees and units that analyze environmental issues concerning collection of baseline data on the current level of compliance with regulations and policies and define annual measurable goals for improvement in comparison to the baseline.

Recommendation No. 1c

Review and modify, as necessary, the Forest Service Washington Office's oversight process to ensure accountability in the area of environmental analysis.

Recommendation No. 1d

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Report the environmental analysis and implementation monitoring process as a material weakness in the Department's FMFIA report.

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CHAPTER 4 - CONCLUSION NO. 2 INTEGRITY OF ENVIRONMENTAL DECISIONS WAS NOT MAINTAINED

The Forest Service could not ensure the integrity of its environmental decisions and the supporting environmental assessments. Specifically, (a) mitigation measures intended to limit environmental damage associated with timber sales were either not implemented or not incorporated into the timber sale contract, (b) more timber was harvested than permitted by the environmental documents, and (c) timber stand numbers could not be reconciled between the timber sale contract and the environmental documents. As a result, the credibility of the Forest Service suffers when promises, in the form of mitigation measures, are not kept and the published position of the agency conflicts with on-the-ground reality. Further, the environment suffers when Forest Service employees overlook sensitive resource issues and fail to protect threatened, endangered, and sensitive species, heritage resources, and water quality. In addition, timber purchasers suffer when errors and omissions come to light and cause Forest Service to cancel or modify previously approved timber sale contracts. In one case, such errors and omissions resulted in the cancellation of several timber sale contracts and the subsequent payment of about $650,000 to timber purchasers for breach of contract.

Mitigation Measures

Applicable mitigation measures contained in 10 of 12 decision notices and referenced environmental assessments reviewed, were not always implemented. In addition, mitigation measures were either omitted or incorrectly incorporated into 4 of 12 accompanying timber sale contracts. These mitigation measures are designed to reduce the adverse impacts of timber sale activities on the environment. Generally, mitigation measures were not implemented due to district personnel (a) not being familiar with the mitigation measures contained in the environmental documents, (b) not adequately monitoring actual implementation of the mitigation measures, (c) not comparing timber sale contract clauses with the applicable environmental documents, and (d) oversight. As a result, streams, wildlife habitat, heritage resources, water quality, and visual quality were or could be adversely affected. In addition, "Findings of No Significant Impact" conclusions (i.e., that there was no significant affect on the quality of the human environment) were questionable.

Both Forest Service and Office of the General Counsel (OGC) personnel told us that mitigation measures contained in the decision notice and referenced environmental assessment must be implemented, if Forest Service relies on such measures to support the "Findings of No Significant Impact."

Timber sale field visits disclosed that mitigation measures designed to protect key resource areas were not adequately implemented. The measures involved mitigation of riparian areas and stream management zones, wildlife habitat, heritage resource sites, visual quality, and soils. The following example describes an issue regarding riparian areas and stream management zones. Other examples are included in exhibit E.

Forest Service did not always protect riparian and stream management zones in project areas. This was caused by insufficient reconnaissance by forest and district personnel, not incorporating the correct equipment exclusion zone in timber sale contracts, and a lack of identification of protection boundaries and monitoring of timber sale areas. In addition, Forest Service used common standards and guidelines contained in the Forest Land and Resource Management Plans (FLRMP), such as no clearcutting within 50 feet of any perennial stream, instead of site specific analysis and mitigation measures for individual riparian areas. As a result, there was no assurance that dependent ecosystems were not adversely affected by Forest Service's actions.

Riparian areas are defined as land and vegetation lying within 100 feet from the edges of all perennial streams, lakes, and other bodies of water. Regulations[1] and the Forest Service Manual[2] provide that special consideration is to be given to riparian areas. Specifically, each riparian area is to be delineated and evaluated prior to implementing any project activity. Finally, preferential consideration is to be given to riparian dependent resources when conflicts among land-use activities occur.

We identified riparian area and stream management zone protection problems involving 6 of 12 environmental assessments and 1 of 12 timber sale contracts. For example:

> On the Clinch Ranger District, the environmental assessment's biological evaluation referenced a mitigation measure from the FLRMP which prohibited clearcutting within 50 horizontal feet of any perennial stream. However, due to the presence of large numbers of threatened and endangered mussel species down stream, the biological evaluation doubled the width as a mitigation measure. Our visit to the Mahogany II Skyline timber sale disclosed that the stream management zone was as narrow as 15 feet in one location. The pre-sale forester told us that the zone width should have been 100 feet. However, the timber sale administrator stated that he marked the stream management zone boundary at 50 feet because no one advised him that it should be larger.
>
> At our request, the district fisheries biologist randomly measured the stream management zone boundary widths throughout the sale's three harvest units. In two of the units, six of the nine measurements taken disclosed boundary widths less than the required 100 feet. These six measurements showed boundary widths ranging from 13 to 85 feet. Together with personnel from the forest supervisor's office, he revisited the site and based on visual observations, concluded that an excessive amount of sediment was entering the stream which could adversely affect the mussels downstream. The district fisheries biologist subsequently placed a large amount of woody debris (treetops) in the stream channel to help prevent the excess sediment from washing downstream.

As a result of the cited mitigation measures not being implemented, the Forest Service's commitment to the protection of the environment could be questioned, and elements of the human and animal environment were or could be adversely affected. At the closeout conferences, Forest Service personnel generally agreed that in the cited cases, the mitigation measures had not been implemented. To prevent similar situations from occurring in the future, the Marlinton Ranger District developed a control measure requiring that all mitigation measures contained in the decision notice and environmental assessments be included on a checklist. As each mitigation measure was accomplished, the responsible person would initial and date the item. In this manner, district personnel could easily identify any remaining items not yet performed.

We further concluded that Forest Service needs to ensure that environmental protection measures identified in the applicable environmental documents are included in its timber sale contracts.

Harvested Timber

Timber sales contracts authorized the harvest of more acres or trees than specified in 3 of 12 decision notices and environmental assessments reviewed. In addition, we found one instance where a lesser number of acres was harvested than specified. Forest Service Washington Office personnel advised us that these situations had occurred because Forest Service was trying to be too precise with their decision notices by specifying a specific number of acres rather than using

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[1] 36 CFR 219.27e, July 1987.

[2] Forest Service Manual 2526.03, effective December 20, 1994.

an approximate number of acres. Forest Service personnel at the field locations agreed that the acre and tree totals harvested exceeded the maximum allowed. However, they viewed the acres approved for harvest under the alternative selected in the decision notice as a planning guideline rather than a limitation on harvesting. They believed that when laying out the sale area or using different measuring techniques (dot grid versus traversing), some variances could occur.

The harvesting of a different number (plus or minus) of acres could adversely affect the environment. In addition, noncompliance with public decision documents can undermine Forest Service's integrity with the public.

The Washington Office NEPA coordinator stated that when an alternative is selected from an environmental assessment in a decision document, then the selected alternative becomes binding. The NEPA coordinator further stated that the key to how much flexibility Forest Service has in implementation is based on the language and analyses contained in the decision document and the environmental assessment. In the cases cited below and in exhibit E, Forest Service had no flexibility because the decision documents and the environmental assessments specified that either a specific number of trees, or acres, were to be harvested. Therefore, the number specified should not have been exceeded. In addition, Forest Service Washington office personnel stated that cutting fewer acres could be just as serious a problem as cutting excess acres. The cutting of fewer acres could mean that the project objectives and the desired future condition for the area may not be met. Details follow:

At the Clinch Ranger District, Forest Service officials allowed the harvesting of approximately three times (30 trees per acre) the maximum number of trees. The public was advised that a maximum of 10 trees per acre would be cut and the analyses supporting the decision notice were based on this figure. Specifically, the revised environmental assessment provided, under the caption "environmental consequences", that on "oak decline"[3] salvage units, 3 to 10 trees per acre would be removed. This criteria was also used in various supporting analyses, such as age class distribution and visual effects. The public was advised of the criteria through newspaper announcements and responses to public inquires.

Our field visits disclosed that on "oak decline" salvage units, more than 10 trees per acre were designated for harvesting. Besides oak trees, softmast tree species (e.g., poplar, dogwood, and gum) were marked for harvest. The pre-sale forester advised that when the "oak decline" units were marked, all merchantable trees showing oak decline were marked without regard to the 3 to 10 tree limit. Concerning the harvesting of softmast trees, he considered the removal of these trees as forest health and gypsy moth prevention measures. However, we calculated that an average of 30 trees per acre would be harvested. The area reviewed involved 4 timber sales with 21 "oak decline" units covering 766 acres.

The harvesting of the additional trees may be justified. However, without issuing an amendment to the decision documents and performing additional analyses (e.g., removal of wildlife habitat), the harvesting of additional oak decline and softmast trees would not be appropriate. The regional forester concurred with our position. After we discussed the issue with him and members of his staff, he immediately suspended operations on six timber sales and advised that the timber sales would be modified to be consistent with the current NEPA decision for these sales. This would include the deletion of all species from the sales except oak. Ultimately, five of the six timber sales were terminated and Forest Service paid claims totaling

[3] Oak decline is a complex problem characterized by progressive crown dieback and mortality. Other symptoms may include chlorosis, dwarfed or sparse foliage, premature autumn coloration, and epicormic branching. It is best explained as the interaction of long-term predisposing stress factors (drought or tree age), short-term inciting factors (spring frost or insect defoliation), and long-term contributing factors of biotic origin (root disease, bark beetles, and canker or decay fungi).

about $650,000 to the timber purchasers for breach of contract. In addition, the regional forester and forest supervisor commissioned a team to visit the district and determine why the situation occurred, and to make recommendations to prevent recurrence of the problem.

Exhibit E discusses two additional cases where the acreage to be harvested contained in the timber sale contracts was exceeded and one case where the acreage was less than the acreage specified in the environmental documents for harvest.

Forest Service Washington Office personnel advised that situations like this could be prevented in the future, if environmental document preparers permit flexibility (e.g., number of acres to be harvested) in their estimates of the environmental effects of quantitative objectives or when they establish environmental standards. Such flexibility would allow on-the-ground modifications to be made without being inconsistent with the environmental assessment, decision notice, or "Findings of No Significant Impact."

Timber Stand Numbers

Specific areas to be harvested as presented in the environmental documents could not always be easily reconciled to the areas contained in the applicable timber sale contracts. This occurred because the districts changed stand numbers between the signing of the decision documents and the issuance of the timber sale contracts. As a result, there was no assurance that the trees identified in the environmental documents were the ones actually being harvested.

For example, the Marlinton Ranger District changed, combined, and/or added stands in the Brushy Mountain timber sale project area. Specifically, stands had been renumbered for 10 of the timber sale's 28 payment units. Consequently, it was impossible to reconcile the timer sale harvest units to the environmental assessment without a compartment map.

Recommendation No. 2a

Develop an administrative control plan which includes a provision to require deciding officials, prior to signing the decision notice, to review the draft decision notice and reference the environmental assessment to ensure that mitigation measures are appropriate.

Recommendation No. 2b

Include in the administrative control plan a provision whereby the deciding official verifies that mitigation measures are properly implemented.

Recommendation No. 2c

Require that Washington Office personnel, regional foresters, and forest supervisors perform sufficient implementation monitoring to ensure that the provisions of the administrative control plan developed for Recommendations Nos. 2a and 2b are working as intended.

Recommendation No. 2d

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Direct that all timber sale contract preparers sign and place in the environmental project file a certification that the timber sale contract is in agreement with the decision document. Specifically, ensure that items, such as maps, number of acres, location, harvest method and stand numbers all agree. Secondly, ensure that all mitigation measures which should be included in the timber sale contract are included.

Recommendation No. 2e

Require that a cross-walk from the applicable timber sale contract to the decision document and referenced environmental assessment be prepared and filed in the project folder whenever stand numbers are changed.

Recommendation No. 2f

Require all line officers with timber sales on their units to review this report to obtain an understanding of the deficiencies noted.

Recommendation No. 2g

Direct regions and forests to assemble a team to review a sampling of different sales in process to determine if similar problems exist. For problems disclosed, direct applicable regions and forests to take documented corrective actions commensurate with the magnitude of the problems disclosed by the reviews.

CHAPTER 5
ENVIRONMENTAL DOCUMENTS WERE NOT RELIABLE

The Forest Service cannot rely on their environmental documents (i.e., environmental assessments, biological evaluations, decision notices and "Findings of No Significant Impact") to provide assurance of compliance with environmental laws and regulations. This condition exists because the administrative controls over the preparation of environmental documents were not effective (see Conclusion No. 1). As a result, (a) Forest Service's conclusions that actions (e.g., timber sales) would not have a significant effect on resources, threatened, endangered, and sensitive species, and the human environment were questionable, (b) all relevant data was not collected and presented to the public, and (c) the environment could be adversely effected.

Our review of 12 environmental assessments and the associated biological evaluations, decision notices, and "Findings of No Significant Impact" noted varying degrees of deficiencies and omissions. The primary problem with the environmental assessments involved the fact that individual resource analyses were either missing or incomplete (e.g. cumulative effects).

Eight of the biological evaluations did not address all threatened, endangered, and sensitive species either known or expected to exist in the project areas. In addition, surveys to locate or confirm the absence of threatened, endangered, and sensitive species were either not conducted or not documented for six of the biological evaluations.

The decision notice omissions included (a) a cross-reference to the environmental assessment, or the basis for all findings as required by the NFMA, (b) the reasons why an alternative was not selected, (c) public involvement, and (d) specific minimum requirements for filing an appeal.

The "Findings of No Significant Impact" generally did not contain an adequate description of the analysis performed and the necessary reference to supporting documentation for each of the 10 intensity items (e.g., both beneficial and adverse impacts). The specifics for each of the four cited items are presented in Conclusion Nos. 3 through 6.

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CONCLUSION NO. 3
ENVIRONMENTAL ASSESSMENTS DID NOT INCLUDE ADEQUATE ANALYSES

All 12 environmental assessments reviewed had varying degrees of deficiencies and omissions. The deficiencies and omissions involved incomplete cumulative effects analyses and missing analyses for resource areas such as riparian areas, soils, and visual quality. Consequently, environmental assessments were not adequately performed, were not in compliance with applicable regulations, and were not properly documented. As a result, (a) Forest Service's conclusions that actions (e.g., timber sales) would not have a significant effect on resources, threatened, endangered, and sensitive species, and the human environment are questionable, (b) all relevant data was not presented to the public as required, and (c) the environment could be adversely affected.

The environmental assessment is a concise public document that provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a "Finding of No Significant Impact." It is designed to address all resource areas that could be adversely affected by Forest Service's timber sale actions.

Our review disclosed incomplete or excluded cumulative effects analyses and inadequate or excluded resource analyses. The specifics are as follows.

Cumulative Effects

Cumulative effects analyses for 10 of 12 environmental assessments reviewed were either incomplete or not performed. The incomplete analyses resulted from Forest Service not including the required discussion of past, present, and foreseeable future actions and their affect on the project area's environment.[4] Concerning the excluded analyses, some Forest Service personnel believed that if the public did not raise an issue involving a specific resource, it need not be analyzed in the environmental assessment. Without these cumulative effects analyses, Forest Service cannot support its conclusion that the cumulative impact of its actions (e.g., timber sales) will not have a significant effect on environmental resources in the project area.

- Past, Present, and Foreseeable Future Actions Not Included.

  Seven of the twelve environmental assessments reviewed (Laurentian, Black Creek, and Deerfield Ranger Districts) did not include analyses of Forest Service's and private landowners' past, present, and near future actions within or adjoining the applicable project area. Without these analyses, the effects of farming, mining, logging, and commercial or residential development would not be disclosed in the cumulative effects analysis for the various resource areas (e.g., water quality).

  For example, at the Laurentian Ranger District, our field visit disclosed that the county clearcut a 30 acre area which adjoined a 50 acre Forest Service clearcut. However, the county's action was not included in the environmental assessment's cumulative effects analysis. As a result, the contiguous clearcut was about twice the size of the area reflected in the environmental assessment.

- Exclusion of Resource Areas in Cumulative Effects Analyses

  Three of the environmental assessments reviewed excluded some resource areas from the cumulative effects analysis. For example, the Dowell Draft and Stoutameyer Grouse Habitat Environmental Assessments' cumulative effects

[4] 40 CFR 1508.7, July 1994.

analysis addressed soil and water, but did not address wildlife and fisheries habitat, visual quality or heritage resource sites. Each of these resources was present in the project area and could have been adversely affected.

Similar conditions were noted during our review of the Onion Resource Management Projects environmental assessment. (See exhibit F.)

Inadequate Resource Analysis

In 10 of the 12 environmental assessments reviewed specific resources were either not adequately analyzed or not addressed at all. The resources involved were riparian areas, critical soils, and visual quality. One example follows with the remainder presented in exhibit F.

- Critical Soils

  Some critical soils were not addressed in 8 of 12 environmental assessments soil analyses at four districts (Deerfield, Marlinton, Black Creek and Laurentian). This occurred because either a generic "White Paper"[5] was used or site specific analyses were incomplete or not performed. As a result, the environmental impact from timber sales on soils, which have either erosion or compaction hazard properties, was not addressed, and therefore, Forest Service's assurance that soils would not be adversely impacted was questionable.

  Critical soils include soils that are highly erodible or compactable, if disturbed. These properties can contribute to increased sedimentation in project area streams (erosion) or can prevent an area from revegetating (compaction). To identify critical soils in a project area, we reviewed the applicable soil maps and listed the soil types. We then compared the list with the environmental assessment to determine whether all indicated critical soils had been addressed.

  The three environmental assessments reviewed at the Black Creek Ranger District did not specifically identify or discuss the site specific effects of the timber sale on the sensitive soils that were present. This was because the district planner did not believe this was necessary as long as the data was provided for analysis. In addition, he believed that the general mitigation measures prescribed should prevent any adverse affects. However, since site specific effects were not discussed, there was no assurance that the sensitive soils would not be adversely affected.

  Our review disclosed similar conditions at the Deerfield, Laurentian and Marlinton Ranger Districts. There was a slight variation at the Deerfield Ranger District as they used a "White Paper" to excluded site specific soil analyses. (The specifics concerning this "White Paper are contained in exhibit F.) Based on our reviews, we concluded that the environmental assessments did not identify or discuss some severely erosive and/or sensitive soils occurring in the timber sale areas. Forest Service personnel generally agreed with our conclusions.

Ranger District personnel stated that these deficiencies and omissions occurred because they (a) wanted to keep the costs of performing environmental assessments down, (b) wanted to keep the document brief, (c) were reluctant to contact adjoining private landowners, and (d) overlooked certain requirements.

We concluded that Forest Service environmental assessments must be improved to include performing and documenting required analyses for the affected resources in the project area. In addition, Forest Service should properly address the

[5] A document used by the George Washington National Forest to set criteria defining the conditions under which site specific soil or water analysis for water yield, soil erosion and sediment would not be needed for further timber sale environmental assessments.

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cumulative effects that its actions will have in the project area in its environmental assessments.

Recommendation No. 3a

Develop appropriate administrative controls to ensure that environmental assessments are complete and contain all required analyses. This could include requiring the use of a checklist modeled after the 1900-1 training course environmental assessment checklist. In addition to the items currently included in the checklist, the following should be added: (a) cumulative affects analysis (e.g., past, present, future actions etc.) for each applicable resource, (b) site specific riparian management area analyses, (c) specific locations for applicable mitigation measures (e.g., partial retention for visual quality), and (d) a requirement that all sensitive soils on soil maps be addressed.

Recommendation No. 3b

Direct the cited forest to either update the "White Paper" analysis or drop it as a basis for environmental soil analyses.

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CONCLUSION NO. 4
BIOLOGICAL EVALUATIONS WERE INCOMPLETE

Forest Service stated in the 12 decision documents (decision notices and "Findings of No Significant Impact") reviewed that threatened, endangered, and sensitive species would not be affected by the stated activities (e.g., timber harvesting, road building, etc.). However, 8 of the 12 biological evaluations reviewed did not address all threatened, endangered, and sensitive species either known or expected to exist in the project areas. In addition, surveys to locate or confirm the absence of threatened, endangered, and sensitive species were either not conducted or not documented. As a result, there was no assurance that threatened, endangered, and sensitive species or their habitat had been located and properly protected. Also, historically, the public has appealed various Forest Service decisions regarding timber sales based on incomplete biological evaluations.

The purpose of the biological evaluation is to determine whether proposed actions (e.g., timber sales) will affect (a) threatened or endangered species on the national forest's list, sensitive species on the regional forester's list or (b) their critical habitat. The Washington office program leader for threatened, endangered, and sensitive species confirmed that all such species should be specifically addressed in the biological evaluation.

The specific errors disclosed in the biological evaluations follow.

All Threatened, Endangered, and Sensitive Species Were Not Addressed in Biological Evaluations

We determined that 364 of 436 threatened, endangered, and sensitive species which could be present or that had critical habitat in the project areas were not discussed in the eight cited biological evaluations. Our determination was based on a comparison of threatened, endangered, and sensitive species listed in the biological evaluation with those contained in either the regional forester's sensitive species list or the national forest threatened and endangered species list.

We took exception to any threatened, endangered, and sensitive species that was not specifically discussed by name.

The biological evaluation for the Stoutameyer Ruffed Grouse Habitat Improvement Project listed no (emphasis added) threatened, endangered, and sensitive species despite the fact that 127 were either known to occur or were likely to be present in the project area. Other examples are included in exhibit G.

Site Surveys

Site specific surveys for threatened, endangered, and sensitive species were either not performed or not documented at three of the six ranger districts (Black Creek, Clinch, and Deerfield) reviewed. This occurred because biologists were not aware that surveys were to be conducted or they lost their field survey notes. Forest Service deciding officials needed information from these surveys to identify the presence and location of either threatened, endangered, and sensitive species or their designated critical habitat and effects. Therefore, the lack of these surveys could jeopardize threatened, endangered, and sensitive species or their habitat. Also, in the past, the public has questioned and appealed Forest Service decisions based on the inadequacy of threatened, endangered, and sensitive species surveys.

For example, the biological evaluation for the Big Flat Top Opportunity Area (Clinch Ranger District) provided that "Physical destruction or habitat alteration will be avoided by conducting a site specific survey of suitable

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habitat areas during the project layout phases for each planned activity and dropping occupied sites from the project." None of these surveys had been performed at the time of our review. When advised of this condition, the regional forester immediately suspended the applicable timbers sales and directed that the site surveys be performed.

Improper Use of Information

Two ranger districts (Marlinton and Black Creek) improperly used internal and/or external documents as a basis to exclude or not survey for threatened, endangered, and sensitive species even though suitable habitat was present. As a result, threatened, endangered, and sensitive species may not have been located and protected.

In one case, the Monongahela National Forest was improperly using a "Likelihood of Occurrence Table" to exclude some threatened, endangered, and sensitive species from detailed analysis. Specifically, they did not always address species when the table said the species may occur in the project area. In the second case, the Black Creek Ranger District inappropriately used a letter from the Natural Heritage that they had no record of threatened, endangered, and sensitive species being present in the project area. However, the letter further cautioned that most natural areas had not been surveyed. Therefore, we concluded that the letter did not provide adequate support for the conclusion that threatened, endangered, and sensitive species were not present.

Additional information about these examples as well as additional cases identified during our review are presented in exhibit G.

Concerning the deficiencies noted regarding the biological evaluations, ranger district personnel stated that they (a) wanted to keep the cost of preparing biological evaluations down, (b) wanted to keep the biological evaluation brief, (c) lost field survey notes applicable to determining the presence of threatened, endangered, and sensitive species, or (d) were not aware of the site specific survey statements contained in the biological evaluation.

In summary, we concluded that Forest Service biological evaluations could be improved by addressing all applicable threatened, endangered, and sensitive species. In addition, Forest Service should conduct and document field surveys in those situations when adequate information about possible effects to threatened, endangered, and sensitive species is not available or when suitable habitat for such species is present in the project area.

Recommendation No. 4a

Direct field units to determine and document in the biological evaluation the effects on all threatened and endangered species contained on the national forest's list and all sensitive species contained on the regional forester's list that could be affected by the proposed action. For threatened, endangered, and sensitive species on the cited lists that will not be affected, document this conclusion in the biological evaluation.

Recommendation No. 4b

Direct that surveys be conducted or other relevant information gathered, as needed, when information about possible effects to threatened, endangered, and sensitive species is not available or there is suitable habitat for such species in the project area. If justification exists for not performing these surveys or gathering the additional data, the biological evaluation should reflect the justification.

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Recommendation No. 4c

Direct appropriate resource specialists to make use of all available sources of species occurrence information, including but not limited to "Likelihood of Occurrence Tables" and Natural Heritage database information, as sources for identifying the possible presence of threatened, endangered, and sensitive species in a project area. Use strategies such as training courses, district and forest reviews, and each national forest's annual monitoring and evaluation report, and each region's management attainment report to ensure this type of information is used correctly by specialists.

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CONCLUSION NO. 5
DECISION NOTICES DID NOT ADEQUATELY ADDRESS REQUIRED ELEMENTS

The decision notices for the 12 environmental assessments reviewed did not include or adequately address the required elements. As a result, the appropriateness of the decisions and compliance with other laws and regulations were questionable.

The purpose of the decision notice is to provide the public with a clear description as to what the decision is and the rationale behind that decision. Our review of 12 decision notices disclosed the following.

Findings Required By Other Laws and Regulations

The 12 decision notices either did not include a cross-reference to the environmental assessment or present the basis for all required findings. For example, NFMA[6] provides, among other things, that certain requirements be met when there is vegetative manipulation of tree cover. However, the Compartment 205 (Black Creek Ranger District) decision notice simply stated that "the activities in this decision that involve vegetative manipulation of tree cover comply with the following seven requirement found at 36 Code of Federal Regulations (CFR) 219.27(b) * * *." The seven requirements were then listed without further discussion or cross-referencing.

General Omissions

Required items were generally omitted from the decision notices reviewed. The most common omissions involved alternatives considered and not selected, public involvement, and appeal rights.

- Alternatives Considered and Not Selected

  The alternative or the reason why an alternative was not selected were not clearly presented in 6 of the 12 decision notice. This information is important in providing the public with an understanding regarding what alternatives were considered and the rationale used to or not select a specific alternative.

  For example, the Stoutameyer Ruffed Grouse Decision Notice which called for clearcutting 99 acres and included road construction did not discuss why an alternative which clearcut 40 less acres and constructed no roads was not selected.

- Public Involvement

  Two decision notices (Laurentian Ranger District) did not present or reference public involvement because this discussion was included in the environmental assessment. However, the Forest Service handbook[7] provides that a brief summary of public involvement should be included in the decision notice. As a result, there was no explanation regarding how the input from the public was considered in making the decision. Interest from the public

[6] 36 CFR 219.27b, effective July 1987.

[7] Forest Service Handbook 1909.15.43.21, effective September 21, 1992.

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was evident because the district received over 60 comments for each of the planned actions.

- Appeal Rights

  The appeal rights section of the decision notices could be improved by including the specific minimum requirements which an appeal must contain. This is important because an appeal can be denied if the minimum requirements are not met. Our review disclosed that while the 12 decision notices contained the required appeal rights section, only 4 cited the specific minimum requirements that must be contained in an appeal. The remaining eight provided only basic information such as a reference to the applicable CFR.

For the cited decision notices, ranger district personnel stated that they (a) considered the decision notices to be adequate, (b) felt that the questioned items were discussed in the environmental assessment and thereby, did not need to be repeated in the decision notice or (c) did not notice the omission.

Based on the above, we concluded that decision notices should be improved to better support the responsible official's decision regarding selection of the specified action in the project areas. At the closeout conferences, Forest Service personnel generally agreed that additional documentation and cross-referencing were needed to explain and justify their decisions.

Additional information concerning the decision notices reviewed is presented in exhibit H of this report.

Recommendation No. 5

Require that a decision notice checklist, modeled after the checklist contained in the 1900-1 training course, be completed, signed by the deciding official, and filed in the project file for all decision notices.

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CONCLUSION NO. 6
"FINDINGS OF NO SIGNIFICANT IMPACT" WERE INCOMPLETE

Forest Service's documentation of "Findings of No Significant Impact" generally did not include an adequate description of the analysis performed and necessary reference to supporting documentation. As a result, Forest Service's conclusions of no significant impact were questionable. In addition, a lack of adequate analysis or supporting documentation could provide a basis for appeals, resulting in cancellation or delay of projects.

The "Finding of No Significant Impact" briefly presents the reasons why an action (e.g., timber sale) will not have a significant effect on the human environment and for which an environmental impact statement will not be prepared. The reasons are based on an analysis of the scope of the action and 10 specific intensity items (e.g., both beneficial and adverse impacts).

Our review disclosed that none of the 12 "Findings of No Significant Impact" reviewed contained either a discussion of how the conclusion was reached or a reference to the applicable supporting data in the environmental assessment for all 10 intensity items. In fact, in 2 cases (Laurentian Ranger District), not only were none of the 10 intensity items listed or discussed but the required statement that an environmental impact statement would not be prepared was omitted.

At a minimum, each of these intensity items should have been referenced to the applicable pages in the environmental assessment. Without this information, the responsible officer was not providing necessary information to support his/her conclusion. A brief discussion of each intensity item and reference to the environmental assessment is taught in the Forest Service 1900-1 course and considered legally defensible by OGC.

Based on the above, we concluded that there was no assurance that the reasons for not performing an environmental impact statement, as stated in the "Findings of No Significant Impact", were adequately supported. During closeout conferences, Forest Service personnel generally agreed that additional documentation and cross-referencing were needed to explain and support the conclusions reached. Additional information concerning this issue is presented in exhibit I.

Recommendation No. 6a

Direct that preparers of "Findings of No Significant Impact" include a brief explanation of the conclusion reached for each intensity item and include the appropriate reference to specific pages in the environmental assessment or other documents used as a basis for the conclusion.

Recommendation No. 6b

Direct responsible officials to ensure that "Findings of No Significant Impact" contain the statement that an environmental impact statement is not needed.

CHAPTER 6 - EXHIBITS

EXHIBIT A - NEPA

This exhibit presents a history of the NEPA laws and a brief description of the steps in the NEPA process for a typical timber sale.

The late 1960's and the 1970's were a period during which many significant Federal environmental statutes, having direct and indirect impacts on the Forest Service timber sale program, were passed. Prominent examples include the NEPA of 1969; the Clean Water Act of 1972; the Endangered Species Act of 1973; the NFMA of 1976; the Archeological Resources Protection Act of 1979; and the National Historic Preservation Act of 1980. During the 1980's, many of these laws, as well as several others, were amended to strengthen their environmental safeguards.

Coincident with the passage of the various Federal statutes, and in some instances, in response to them, many States have enacted environmental legislation that further impacts Forest Service. Examples include State forest practice acts, clean air and water acts, historic preservation acts, and the endangered species act. Sometimes, the standards and procedures embodied in these State statutes are more stringent than those mandated in Federal law. For example, several State historic preservation acts require more detailed sampling, and greater consultation and mitigation, than does Federal law.

Before committing to a timber sale at a particular site, the Forest Service is now required to analyze virtually every environmental impact that might result from making that sale, and to document, in detail, the results of those analyses. The following table highlights some of the specific types of analyses that Forest Service is now required to make, and shows the law or laws that mandate these additional requirements.

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EXHIBIT A
NEPA PROCESS FOR TIMBER SALES

ENVIRONMENTAL ANALYSES THAT MUST BE COMPLETE BEFORE COMMITTING TO A NATIONAL FOREST TIMBER SALE	
Type of Analysis	**Federal Laws Mandating**
Assess potential impacts on threatened and endangered species; native vertebrate, fish, and plants.	NFMA, Endangered Species Act
Assess visual quality impact.	NFMA, NEPA
Assess watershed impact.	NFMA, NEPA, Clean Water Act
Perform inventory of cultural resources.	NFMA, NEPA, National Historic Preservation Act, Archeological Resources Protection Act
Assess soil productivity impacts.	NFMA, Multiple-Use Sustained Yield Act
Assess air quality impacts.	NFMA, NEPA, Clean Air Act

TABLE

In addition to the Federal and State laws cited, applicable Federal regulations are contained in 36 CFR parts 215-219 and 40 CFR parts 1500-1508. Forest Service has provided implementing direction in Forest Service Handbook 1909.15 and Chapter 2600 of the Forest Service Manual.

The following briefly describes the steps in the NEPA process for a typical timber sale.

a. Identify the proposed action (e.g., timber sale), purpose and need (e.g., why a timber sale is needed), and the decision to be made (e.g., have or not have the timber sale).

b. Conduct scoping (e.g., public involvement), identify environmental issues (e.g., protecting wildlife habitat, etc.), and define measurement criteria, information, and data needs.

c. Approve the significant environmental issues to be considered in formulating alternatives.

d. Develop a range of alternatives (e.g., no timber sale, clearcut 50 acres, thin 50 acres etc.) which clearly define the issues and meet the purpose and need and which are consistent with the Forest Land and Resource Management Plan (FLRMP).

e. Perform detailed analyses of the various resource areas (e.g., soil, water, wildlife, etc.). Disclose and report direct, indirect, and cumulative effects for each alternative.

f. Finalize the NEPA document. For a timber sale, this is usually an environmental assessment. The environmental assessment contains information regarding the detailed analyses performed. It identifies the effects on the environment that each of the alternatives will have by resource, and any

mitigation measures which need to be implemented to reduce or eliminate any adverse impact on the environment.

g. Prepare the decision document, and after notifying the public, issue the decision document(s). For a timber sale, this is usually a decision notice and a "Finding of No Significant Impact." The decision notice informs the public of the alternatives considered, which alternative was selected for implementation, reasons why it was selected, and reasons why the other alternatives were not selected. A "Finding of No Significant Impact" basically advises the public that based on the environmental assessments, no significant impact to the environment will occur and an environmental impact statement is not needed.

h. Implement the timber sale if no appeals are filed (36 CFR part 217) within 45 days.

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EXHIBIT B - SITES VISITED

SITES VISITED		
SITE	**CITY**	**STATE**
FS Headquarters	Washington	DC
Regional Offices		
Eastern (1)	Milwaukee	WI
Pacific Southwest	San Francisco	CA
Southern	Atlanta	GA
Forest Supervisor Offices		
George Washington NF (2)	Roanoke	VA
Jefferson NF (1)(2)	Roanoke	VA
Monongahela NF	Elkins	WV
NF in Mississippi	Jackson	MS
Superior NF	Duluth	MN
Tahoe NF	Nevada City	CA
Ranger District Offices		
Black Creek (1)(3)	Wiggins	MS
Clinch (1)	Wise	VA
Deerfield	Staunton	VA
Laurentian (1)	Aurora	MN
Marlinton	Marlinton	WV
Nevada City	Nevada City	CA

(1) - Visited as part of the survey
(2) - Combined into the George Washington and Jefferson NFs
(3) - Combined and renamed the Desoto Ranger District

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EXHIBIT C
ENVIRONMENTAL ASSESSMENTS AND TIMBER SALES REVIEWED

Ranger District	Environmental Assessment	Timber Sale	Decision Notice Date
Black Creek	Compartment 205	Compartment 205	December 1993
	Compartments 254/255	Compartments 254/255 and 261	October 1992
	Compartment 261		October 1992
Clinch	Big Flat Top Opportunity Area	Glades and Others	August 1992
Deerfield	Stoutameyer Ruffed Grouse	Stoutameyer and Stribling	February 1996
	Dowells Draft Ruffed Grouse	Camp Ridge and Houton Grouse	September 1993
Laurentian	Toimi Opportunity Area	Murphy Creek	May 1993
	Pine Mountain	Silver Dollar	December 1993
Marlinton	Brushy Mountain	Brushy Mountain	May 1993
	Elk Mountain	Elk Mountain	May 1995
Nevada City	Madrone Projects	Madrone	August 1994
	Onion Resource Management Projects	Onion	August 1992

CQ509

EXHIBIT D
SUMMARY OF ERRORS FOR ENVIRONMENTAL DOCUMENTS REVIEWED

ENVIRONMENTAL ASSESSMENT												
DEFICIENCY	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**
Mitigation Measure Not Implemented												
Riparian Areas	X	X	X	X	X						X	
Heritage Resources				X					X			
Wildlife Habitat				X	X	X						
Visual Quality							X		X			
Soil Erosion					X				X			X
Timber Sale Contract Not In Agreement												
Excess Acres/Trees Cut				X		X				X		
Mitigation Measures		X	X	X					X			
Timber Stand Number									X			
Environmental Assessment Omissions												
Past, Present, and Future Cumulative Effects	X	X	X		X	X	X	X				
Excluded Resource Areas					X	X						X
Riparian Areas	X	X	X	X	X	X						
Critical Soils	X	X	X		X	X	X	X		X		
Visual Quality					X	X					X	
Biological Evaluations												
Omitted Addressing TES Species	X	X	X	X	X	X			X	X		
Omitted Site Surveys	X	X	X	X	X	X						
Conclusion Based on Questionable Information	X	X	X						X	X		
Decision Notice - Omissions												
Findings Required by Other Laws	X	X	X	X	X	X	X	X	X	X	X	X
Alternatives Considered and Not Selected					X	X	X	X	X		X	
Public Involvement							X	X				
Appeal Rights	X	X	X	X	X	X			X	X		

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EXHIBIT D
SUMMARY OF ERRORS FOR ENVIRONMENTAL DOCUMENTS REVIEWED

ENVIRONMENTAL ASSESSMENT												
DEFICIENCY	A	B	C	D	E	F	G	H	I	J	K	L
Finding of No Significant Impact - Omissions												
Intensity Items Not Referenced to EA	X	X	X	X	X	X			X	X	X	X
Intensity Items Not Included							X	X				
Environmental Impact Statement Conclusion Not Included							X	X				

Index to Environmental Assessments

A - Compartment 205
B - Compartments 254/255
C - Compartment 261
D - Big Flat Top Opportunity Area
E - Stoutameyer Ruffed Grouse
F - Dowells Draft Ruffed Grouse
G - Toimi Opportunity Area
H - Pine Mountain
I - Brushy Mountain
J - Elk Mountain
K - Madrone Projects
L - Onion Resource Management Projects

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EXHIBIT E
MITIGATION MEASURES AND TIMBER SALE ADMINISTRATION

This exhibit provides details concerning additional cases (not previously presented in Conclusion No. 2) where mitigation measures contained in the environmental documents were not implemented. The exhibit also provides information regarding additional cases where mitigation measures either were not included, or were incorrectly recorded, in the timber sale contract.

Mitigation Measures Not Implemented

Mitigation measures are defined as measures which avoid, minimize, rectify, reduce, eliminate or compensate for the impact of the action (e.g., timber sale) on the environment. Their use enables Forest Service to issue "Findings of No Significant Impact" in lieu of preparing an environmental impact statement, which is generally more involved and costly. Consequently, "Findings of No Significant Impact" frequently include the following or similar statements.

> *Based on the Environmental Assessment and past experience with similar forest management activities, I have determined that the proposed actions, with the mitigation measures and management requirements applied, are not a major Federal action, either individually or cumulatively, and will not significantly affect the quality of the human environment.*

The above statement becomes moot if Forest Service does not implement stated mitigation measures. The following presents a number of cases where this did not occur.

Riparian Areas and Stream Management Zones

- Clinch Ranger District

  In addition to the case cited in Conclusion No. 2, we found inadequate stream management zone boundaries on unit 1 of the Maple Springs Branch sale. The stream management zone boundary measured 36 feet instead of the required 100 feet.

  The environmental assessment required continued in-stream monitoring of Stoney Creek for water quality and aquatic macro-invertebrates because of the identified mussel species; however, the last monitoring of Stoney Creek had been performed about 2.5 years prior to our visit. The monitoring had been discontinued due to a misunderstanding regarding applicable responsibility between the district's and supervisor's office personnel. Water monitoring is important in determining whether the mitigation measures are working as intended. The district ranger told us that the district fisheries biologist would immediately reinstate the monitoring of Stoney Creek.

  We identified similar instances of inadequate stream management zone boundaries at three (Nevada City, Deerfield, and Black Creek) of the five other ranger districts reviewed.

- Black Creek Ranger District

  The environmental assessments for Compartments 254, 255, and 261 contained a mitigation measure which stated that the minimum equipment exclusion zone for perennial streams was 66 feet. However, the timber sale contract for these compartments specified that no equipment activities would occur within

33 feet of streams. While our field visits disclosed that the perennial streams were being flagged with a 66 foot protection zone, the timber purchaser would be within his rights to take equipment into the first 33 feet of this area. This problem had been previously identified in a 1994 review conducted by the forest supervisor's office. The review recommended that, instead of specifying 33 feet in the contract as the equipment limitation zone, a painted boundary on unmerchantable timber should be used. The timber management assistant stated that he used the 33 foot protection zone in the contract because the 66 foot zone would be too large for intermittent streams.

Heritage Resource Sites

For 2 of the 12 environmental assessments reviewed, heritage resource sites were not always protected or identified. This occurred because either a survey to determine the presence of heritage resource sites was not performed, or when located, the sites were not adequately protected. As a result, timber harvesting activities may have destroyed heritage resource sites located in the area.

A heritage/cultural resource site is a site that contains the physical remains of human cultural systems and conceptual context of an area which is useful or important for making land-use planning decisions. The remains include such items as artifacts and ruins whose contents would be in a historic, prehistoric, legendary or sacred context to the culture.

- Marlinton Ranger District

  A heritage resource site had not been protected because the archeologist did not adequately identify the location of the site to the timber sale layout crew. The environmental assessment provided that one heritage resource site had been located which could possibly be affected by timber harvesting. It further provided that the harvest unit boundary would be moved to exclude the site, and therefore, avoid impact. However, our field visit identified what appeared to be heritage resource features inside the harvest unit boundary. Since the trees in the unit had not been cut, we requested that the forest archeologist visit the site and make a determination regarding whether the observed features were part of the heritage resource site. After her visit, the archeologist confirmed that the observed features were part of the site and that it was located inside the timber harvest unit.

  The archeologist reported that since there was no active timber harvesting occurring within this particular unit, there was no immediate danger to the site. To preclude future damage to the heritage resource site, the archeologist's report provided that the following actions would be taken: (a) prior to the end of calendar year 1998, a field review would be performed to identify the exact location of the site, (b) the area would be deleted from the harvest unit and (c) volumes and value of the timber within the newly excluded area would be deducted from the harvest unit through a contract modification.

- Clinch Ranger District

  Our review disclosed that the district had no documentation to show that a heritage resource survey had been conducted in units 1 and 2 (Compartment 2055) of the Glades timber sale. The forest archeologist stated that his records contained no evidence that either a heritage resource survey report had been prepared or a survey had been performed. He stated that this could

have occurred because either the district had not submitted a request, or the request had gotten lost in the supervisor's office. At the time of our review, timber was being harvested in both units. As a result, any heritage resources present in the area were neither identified nor protected and consequently could have been destroyed.

Wildlife Habitat

Eleven of the twelve environmental assessments reviewed provided that improving wildlife habitat was one of the primary reasons for the activity in the project area. However, for 3 of the 11, we found that mitigation measures designed to benefit wildlife were not always implemented. As a result, there was no assurance that wildlife were receiving intended benefits.

- Deerfield Ranger District

  The improvement of ruffed grouse habitat was the primary objective contained in the two environmental assessments reviewed. Specifically, the environmental assessments stated that there was a lack of "drumming logs"[8] in the area on relatively level ground. Both decision notices stated that at least one tree per acre in each unit would be felled and left on the ground to serve as a drumming log. Our site visit to the Camp Ridge Grouse timber sale disclosed that no drumming logs had been left on one 11 acre unit. On other units, we found that drumming logs were either missing or clustered together instead of being distributed one per acre. District personnel stated that the drumming logs had not been left because a prescribed burn was going to be conducted in the area. However, neither environmental assessment mentioned the use of prescribed burning.

  Concerning another wildlife matter, the Stoutameyer Ruffed Grouse Improvement Project's Environmental Assessment provided that natural and constructed water holes would be protected with buffer strips--exact size and shape to be determined by on-the-ground conditions. However, we found that a water hole in unit 3 had not been adequately protected. Specifically, timber slash (tree tops and limbs) was in the water hole. District personnel agreed that this material should have been removed by the timber purchaser.

- Clinch Ranger District

  The district did not apply the minimum buffer zone required by the FLRMP when a cave with potential bat habitat was discovered in the project area, even though the "Finding of No Significant Impact" provided that the alternative being implemented was in compliance with the FLRMP's standards and guidelines. The FLRMP required a 50 foot no (emphasis added) disturbance zone be established for cave entrances. Our field visit disclosed, however, that only a 20 foot buffer zone was established. This occurred because neither the district ranger nor the wildlife biologist was aware of the FLRMP standard. In addition, the timber purchaser had not removed tree tops from a felled tree which covered the cave entrance.

Visual Quality

[8] Drumming logs are downed logs upon which the male grouse advertises his presence during the breeding season.

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EXHIBIT E
MITIGATION MEASURES AND TIMBER SALE ADMINISTRATION

The visual quality of various project areas was not properly considered and protected, and therefore, in some instances, visual quality was adversely affected. Due to concerns expressed by the public, Forest Service routinely assesses visual quality issues in its environmental documents. However, we identified the following instances where mitigation measures designed to protect visual quality of the environment for 2 of 12 environmental assessments were not taken.

- Laurentian Ranger District

  The FLRMP identified Lake County highway 15 as a Sensitivity 1 travel route. This means that visitors to the forest have a high degree of sensitivity or concern for the landscape they view. To address these concerns, the environmental assessment provided that appropriate mitigation measures to meet the "retention" visual quality objective classification along Lake County highway 15 would be implemented. The "retention" visual quality objective provides that human activities are not (emphasis added) evident to the casual forest observer. However, our field visit disclosed that a clearcut was clearly visible from highway 15. We were told by the district office personnel that they did not implement the applicable mitigation measures because the purpose of this clearcut unit was to provide a right-of-way for the relocation of Forest Highway 15. However, the environmental assessment did not disclose this fact. District personnel stated this was an oversight and that this exception should have been discussed in the environmental assessment.

- Marlinton Ranger District

  The environmental assessment for the Brushy Mountain Projects Opportunity Area provided that in order to reduce the visual impact for travelers along State Route 23 and the Allegheny Trail, slash from the timber harvest in compartment 49, (stands 50 and 70), and compartment 48 (stands 20 and 70) would be "lopped" to a height of 36 inches or less and scattered for a distance of 200 feet from the road and trail. District personnel stated that this meant that there would be no slash within 200 feet of the cited road and trail. However, our field visit disclosed that the slash was piled within 125 feet of the cited trail and clearly visible. Although not as readily visible, slash was also piled as close as 150 feet to the road. The distance shortages were the result of errors in the timber sale contract and map which provided for only a 100-foot slash disposal area.

Soil Resources

Districts had not always properly implemented mitigation measures designed to prevent soil erosion for 3 of 12 environmental assessments reviewed. Generally, this was caused by inadequate monitoring to ensure that the mitigation measures had either been installed (e.g., water bars) or were working. As a result, some excessive soil erosion was occurring. Details follows:

- Marlinton Ranger District

EXHIBIT E
MITIGATION MEASURES AND TIMBER SALE ADMINISTRATION

The environmental assessment associated with the Brushy Mountain timber sale required that temporary roads be water barred[9] and seeded to minimize soil erosion. Our field visit to the sale area disclosed that on one unit that had been closed for 1 1/2 years, only about 10 percent of the reseeding on a fairly steep section of the temporary road (unit 3) had survived. The timber management assistant agreed that the seeding had failed and needed to be redone. He stated that this condition had gone unnoticed because they had not had the time to revisit the site. As a result, erosion was occurring and sediment could be reaching a nearby stream, adversely affecting water quality.

- Deerfield Ranger District

  Some water bars had not been installed on a temporary road in unit five on the Stoutameyer Grouse timber sale. The timber sale administrator agreed that the water bars were missing, and stated that the timber purchaser had been instructed to construct the water bars prior to leaving the site for the season. The timber sale administrator further said that he had not returned to the site to verify that the purchaser had actually installed the water bars.

- Nevada City Ranger District

  One new road (No. 9100-1-2) in unit 483 of the Onion timber sale was in poor condition because a number of water bars were missing, resulting in excessive soil erosion. Since the soils in this unit had a high erosion hazard rate, the environmental assessment provided that all water bars and/or dips would be constructed using the spacing guidelines on Timber Sale plan and Profile Sheet No. 17-026-1. The environmental assessment further provided that the road system would be inspected prior to the operating season and problem areas would be identified and corrected. District personnel agreed that the road did not have the required number of water bars, but could not explain how this happened.

Residual Trees

- Clinch Ranger District

  The decision notice for the Big Flat Top Opportunity Area contained a mitigation measure which required that felled trees be limbed and bucked to 33 foot lengths prior to skidding to minimize bole damage to adjacent residual trees within stands scheduled for salvage of "oak decline" and intermediate treatments. However, the applicable timber sale contracts involving "oak decline" salvage units did not contain this provision. The pre-sale forester confirmed that tree length logs were being skidded rather than cut into the required 33 foot lengths. The regional forester advised that this item would be corrected.

Timber Sale Contract Permitted More/Less Acres to be Harvested

- Black Creek Ranger District

[9] Water Bar - A soil erosion control structure that breaks up the straight line flow of water on a hill and diverts it off the side of the road.

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EXHIBIT E
MITIGATION MEASURES AND TIMBER SALE ADMINISTRATION

The decision notices for compartments 254, 255, and 261 stated that 1,033 acres would be cut using various harvesting methods (e.g., clearcut, thinning, etc.). However, the timber sale contract for these compartments provided for the harvesting of only 940 acres.

- Deerfield Ranger District

  The decision notice for the Dowell Draft Ruffed Grouse Habitat Improvement Project provided that 200 acres would be clearcut. However, the district awarded two timber sale contracts involving the harvesting of 211 acres using the clearcut cutting method. As a result, 11 excess acres were harvested. District personnel stated that this occurred because no reconciliation had been performed between the timber sale contracts and the decision notice. To determine what environmental effect this variance had, we requested that the district perform an appropriate "new information" analysis. The Forest Supervisor later made the decision that the variance was insignificant and therefore, would not affect the decision or the analyses contained in the environmental assessments.

- Marlinton Ranger District

  During our review at the Marlinton Ranger District, we identified a similar condition, as discussed above for the Deerfield Ranger District. In this case, the decision notice for the Elk Mountain environmental assessment provided that 44 acres would be harvested using the two-aged harvest method. However, the applicable timber sale contracts contained a total of 46 acres to be harvested using the two-aged harvest method.

Timber Stand Number Not Reconciled

- Marlinton Ranger District

  The district changed, combined, and/or added stands in the Brushy Mountain timber sale project area. Specifically, stands had been renumbered for 10 of the timber sale's 28 payment units. Consequently, it was impossible to reconcile the timber sale harvest units to the environmental assessment without a compartment map. Our review disclosed that three new stands had been established by combining acres taken from stands addressed in the environmental assessment and from stands not addressed in the environmental assessment. In addition, the shape and the number of acres of six stands within compartment 48 had changed. Similar changes in stand numbers involving environmental assessments and timber sale contracts did or could occur at the Laurentian and Nevada City Ranger Districts. To provide assurance that the same trees are included in the timber sale contract that were designated in the environmental assessment, a cross-walk reconciliation should be prepared and included in the project file. If different trees are involved, the deciding officer should make a "new information" effect determination.

CQ509

EXHIBIT F
ENVIRONMENTAL ASSESSMENTS

This exhibit provides additional information on specific cases concerning the conditions cited in Conclusion No. 3 regarding environmental assessments.

The environmental assessment is a concise public document that provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a "Finding of No Significant Impact."[10] The public is advised of the environmental assessments' availability through local newspaper announcements. Interested parties can then either request a copy or review a copy at the applicable ranger district office. Forest Service has provided field units with various guidelines to aid them in preparing environmental assessments. These guidelines include, among other things, a handbook (FSH 1909.15), a Forest Plan Implementation training course (1900-01), and a training booklet co-authored by R-9 Forest Service and Office of the General Counsel personnel on "How To Write Legally Defensible Environmental Assessments."

The environmental assessment is designed to address all the resource areas that could be adversely affected by Forest Service's timber sale actions. For the 12 environmental assessments reviewed, we assessed, among other things, seven key components: cumulative effects, heritage resources, scoping, visual quality, water/riparian resources, soils, and threatened, endangered, and sensitive species.

Incomplete and Excluded Cumulative Effects Analysis

The cumulative effects analyses are a part of the environmental assessment and decision making process. Adverse effects of individual projects on the environment may not be significant, but when those effects are added to those caused by past projects and other anticipated future projects, the adverse effects can become significant. Regulations define cumulative effects as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Other Forest Service guidance suggests that the cumulative effects analysis should be done for each resource separately[11] and if there are no effects, the decision should be documented.[12]

Our review of cumulative effects analyses disclosed that some did not include an analysis of private landowner activities. Also, for some resource areas, we found that no cumulative analysis was presented in the environmental assessment. Examples of the conditions noted follow.

- Past, Present, and Foreseeable Future Actions Not Included

  Seven of the twelve environmental assessments reviewed (Laurentian, Black Creek, and Deerfield Ranger Districts) did not include analyses of Forest Service's and private landowners' past, present, and near future actions within or adjoining the applicable project area. Area maps showed that there was a significant amount of non-Federal land either within or adjoining most of the project areas. Therefore, the inclusion of past, present, and

[10] 36 CFR 215.2, January 1995.

[11] Region 9 NEPA\NFMA Training Booklet, March 1993.

[12] Forest Service Course 1900-01, Handout 9.9, March 1993.

foreseeable future actions on non-Federal land was critical to a viable cumulative effects analysis. Without this analysis, the effects of farming, mining, logging, and commercial or residential development would not be disclosed in the cumulative effects analysis for water quality, fisheries and wildlife habitat, and soil erosion. Forest Service personnel cited their reluctance to contact private landowners to determine what their future plans were as the primary cause for this condition. As a result, factors which could affect the "Finding of No Significant Impact" conclusion were not considered.

For example, at the Laurentian Ranger District, our field visit disclosed that the county clearcut a 30-acre area which adjoined a 50-acre Forest Service clearcut. The county's action was not included in the environmental assessment's cumulative effects analysis, and therefore, the contiguous clearcut area was about twice the size of the area reflected in the environmental assessment. Forest Service personnel stated that they do not contact local government agencies concerning planned projects. They stated that, in this specific case, no adverse effect occurred because the FLRMP allowed even larger clearcuts for moose management. Our field visit also disclosed that a mining operation's tailing ponds adjoined another timber sale unit. However, this condition was not pointed out in the environmental assessment's cumulative effects analyses for water quality.

The cumulative effects analysis at two other districts (Black Creek and Deerfield) also did not discuss Forest Service's and private landowners' past, proposed, present, and near future actions in and around the project area.

Although Forest Service's reluctance to contact private landowners may be applicable to future conditions, it is not applicable to current and past actions. For current and past actions, a review of Forest Service records and observations of the area surrounding the project area should disclose private landowners' past and present actions. The Forest Service training course advocates (a) use of the FLRMP to project possible practices, (b) the need to estimate future off-forest actions by past trends in and around the project area, (c) the use of State and local plans, and (d) consultation with private landowners to identify reasonably foreseeable future actions.

- Exclusion of Resource Areas in Cumulative Effects Analyses

  The Onion Resource Management Projects environmental assessment did not address the cumulative effects for visual quality, air quality, and transportation. Regarding air quality, the environmental assessment described direct and indirect effects on air quality, but no mention was made of the cumulative effects associated with a proposed burning on air quality. The environmental assessment did state that all proposed burning activities would meet the standards of the local air quality district. Forest Service personnel stated there is no cumulative effects process in place for air quality since it is a State responsibility. While the State may have primary responsibility for air quality, Forest Service should disclose the results of the State's determination of effects in the environmental assessment.

In explaining why cumulative effects for all resource areas were not included in environmental assessments, Forest Service personnel at some locations stated that the environmental assessment is an issue driven document in which the analysis may have been performed, but not disclosed in the environmental assessment. This was because either no one expressed concern in the resource area or nothing significant was found. Therefore, cumulative effects often address only watersheds and wildlife. Concerning this position, the Forest Service Deputy Director for NEPA stated that while the cumulative effects analysis does not necessarily have to address all resource areas, it should address the resources that are likely to be affected. For timber sales, these could include soil, water, heritage resources, recreation, etc.

For the cited cases, there was a possibility that the excluded resource would be affected. Therefore, the applicable cumulative effects analysis should have been performed.

Inadequate Resource Analyses

Our review disclosed that resources were either not properly analyzed (e.g., riparian areas) or not addressed at all (e.g., visual quality) in 10 of the 12 environmental assessments reviewed. Specific examples are as follows.

- Riparian Areas

  Riparian areas were not properly analyzed in environmental assessment documents at three of six districts reviewed. This occurred because district personnel either relied on guidelines contained in the FLRMP, which did not meet the 100-feet regulatory[13] requirement for riparian area analysis, or they were confused about what the protection width should be for specific streams. Consequently, the riparian area environment could be adversely affected.

  The riparian areas are extremely sensitive areas for which Federal regulations and Forest Service direction dictate that special attention be given. Specifically, Federal regulations require that special attention should be given to land and vegetation within approximately 100 feet from the edges of all perennial streams, lakes, and other bodies of water. Further, no management practices causing detrimental changes in the water temperature or chemical composition, blockages of water courses, or deposits of sediment shall be permitted within these areas which seriously and adversely affect water conditions or fish habitat. Forest Service incorporated

[13] 36 CFR 219.27e, July 1, 1987.

these requirements into its manual. The manual also requires that riparian resources be given preferential treatment when conflicts among use activities occur. In addition, Region 8 issued a manual supplement which directed district rangers to ensure interdisciplinary involvement and consideration in project planning and in the environmental analysis process on those projects and activities that are in, or influence, riparian areas. The district ranger also is responsible for ensuring that site-specific riparian analysis, prescriptions and mitigation measures are incorporated in project design.

Three districts (Black Creek, Deerfield, and Clinch) frequently used standard buffer zones contained in FLRMPs instead of performing site specific riparian area analyses. In some cases, these zones were less than the required 100 foot special consideration area. Specifics follow.

The Black Creek and Deerfield Ranger Districts' environmental assessments generally did not discuss or analyze the individual riparian areas within the individual project area. To protect riparian areas along perennial steams, they used 66 foot buffer zones as provided for in FLRMPs. Our field visits disclosed that individual riparian areas varied in width from several feet to in excess of 100 feet depending on the topography of the area. Therefore, while the 66 foot buffer zones would be adequate for some riparian areas, it would not be sufficient for those with large flat flood plains. For this reason, it is important that each riparian area receive a site-specific analysis.

The Clinch Ranger District's riparian area analysis for the Big Flat Top Opportunity Area was conflicting and inadequate. Specifically, there was major disagreement within the environmental assessment regarding how many perennial streams were in the area. The Soil, Geology, Water, and Air section of the environmental assessment provided that there were 23 perennial streams in the opportunity area while the biological evaluation showed that there were 2 perennial streams within the opportunity area and all others were classified as intermittent. The distinction is important since perennial streams are subject to riparian area analysis. The environmental assessment further provided for the use of standard 25 to 100 foot protection zones depending on the stream classification. With the exception of two perennial streams, no site specific analyses were performed for the individual riparian areas to determine which protection zone width was needed. District personnel stated that there was some confusion regarding which protection zone width should be used. Our field visits disclosed that actual protection zone widths were even less than that stated in the environmental assessment. (See Chapter 5 - Conclusion No. 3.)

- Soil Analysis Not Performed

The following provides specific information about the soil analyses performed on the Black Creek Ranger District cited in Conclusion No. 3. In making our determination, we reviewed the soil maps and associated soil interpretation for timber activities suitability for the three selected environmental assessments. Our review disclosed that the four compartments covered by these environmental assessments all contained sensitive soils that were rated as poor for either access roads or the operation of timber harvesting equipment. The soils were rated as poor because of flooding, drainage, compaction, slope or soil texture. For example, our review disclosed that the soils in stands 18 and 19 of Compartment 205 were a compaction hazard. Both of these stands were scheduled to be clearcut. However, the specific sites containing sensitive soils were not discussed in the environmental analysis and a site specific survey was not performed to verify the actual

presence of these soils. Instead, the environmental assessment listed the mitigation measures contained in the FLRMP and presented the general effects on the soils of timber harvesting and reforestation activities.

Also, soil maps may contain errors. For example, our review of soil maps at the Black Creek disclosed that there was a critical soil which was a compaction hazard located within a clearcut unit. However, our field examination disclosed that the soil was not present.

The Deerfield Ranger District did not perform site specific soil analyses for the two environmental assessments reviewed. This occurred because a "White Paper" prepared by the George Washington National Forest was used and therefore, there was no assurance that the presence of critical soils in the project area would become known and the appropriate mitigation measures applied.

The "White Paper" summarized the results of 43 soil and water analyses from timber sale environmental assessments and associated "Findings of No Significant Impact". The purpose of the paper was to establish criteria defining the conditions under which site specific soil or water analysis for water yield, soil erosion, and sediment would not be needed for future timber sale environmental assessments. If a proposed timber sale exceeded the guidelines, it merely meant that a detailed analysis would be needed.

We question the continued use of the "White Paper" in lieu of site specific analyses primarily because it is outdated. Our review disclosed that the most recent reference contained in the paper was 1987. Soil scientists from the Jefferson National Forest (recently combined with the George Washington) stated that they did not use the "White Paper" analysis for their environmental assessments soil analyses because they felt that technological innovations had taken place which made the validity of the White Paper analysis outdated. In addition, the Forest Service Chief, in a 1989 letter wrote "We should not assume that the quality of past NEPA efforts will be adequate to meet today's more rigorous needs." In addition, since some soil maps identify only the predominant soil in the area, critical soil areas may not appear on the map. Based on these facts, we concluded that the "White Paper" analysis should either be updated or dropped as a basis for environmental assessments soil analyses and supplemented with site specific analysis.

- Visual Quality

This section presents the specifics concerning the environmental assessments at the Nevada City and Deerfield ranger districts where visual quality issues were not discussed.

The Nevada City Ranger District's environmental assessments for the Madrone timber sale did not address visual quality even though the project is located within a Federal Scenic Byway (corridor) and Highway 20, which bisects the project area, is being considered for designation as a State Scenic Highway. The Forest Environmental Coordinator stated that the forest does not address issues that are not of concern to either the forest or the public. We found however, that the public did raise a visual quality concern by pointing out the need to maintain the scenic views for Highway 20. FS responded in the environmental assessments by stating that any proposed fuels management (cutting trees) activities would be implemented with mitigation to insure the integrity of the visual qualities. Removal of material would be done in a manner that would allow pockets of standing vegetation to remain as a screen.

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We believe that since FS acknowledged that mitigation measures would be needed, the environmental assessments should have included an analysis of the environmental effects and identified the specific mitigation measures to be used to met visual quality objectives. Forest and district personnel agreed that the environmental assessment should have contained a visual quality section.

The Deerfield Ranger District's environmental assessments for the Stoutameyer Grouse and Camp Ridge Grouse timber sales did not discuss visual quality. Instead, the environmental assessments stated that all activities are in the "partial retention" visual quality objective and the "partial retention" quality objective will be met. The "partial retention" visual quality objective, in general, means that man's activities may be evident, but must remain subordinate to the characteristic landscape. The environmental assessments did not identify where the "partial retention" visual quality objectives would be applied and did not reference any specific mitigation measures that would be employed. For example, the environmental assessments did not explain what mitigation measures would be used to meet the visual quality objective for either the portion of the White Oak Trail which crosses two units of the Stoutameyer Grouse timber sale, or trails in units 1 and 19 of the Camp Ridge timber sale.

The Forest Plan Implementation course (1900-01) is one of the ways that Forest Service trains its employees to prepare environmental assessments. Included in the training material is an environmental assessment checklist which is not required to be used. We believe that the required use of a checklist modeled after the 1900-1 training course environmental assessment checklist could help ensure that environmental assessments contain all required analyses. In addition to the items contained in the cited checklist, we believe the following should be added to maximize the benefits from the training: (a) cumulative affects analysis (e.g., past, present, future actions etc.) for each applicable resource, (b) site specific riparian management area analyses, (c) specific locations for applicable mitigation measures (e.g., partial retention for visual quality), and (d) a requirement that all sensitive soils on soil maps be addressed.

We addressed this conclusion in formulating Recommendation No. 3a.

EXHIBIT G
BIOLOGICAL EVALUATIONS

This exhibit provides additional information and specific examples for the conditions discussed in Conclusion No. 4 involving incomplete biological evaluations.

All Threatened, Endangered, and Sensitive Species Were Not Addressed

The purpose of a biological evaluation is to determine the effect of the proposed actions on threatened, endangered, and sensitive species. The Forest Service manual[14] states that biological evaluation shall include an identification of all listed, proposed, and sensitive species known or expected to be in the project area or that the project potentially affects. Forest Serviced personnel confirmed that these species should be specifically addressed in the biological evaluation.

In 8 of 12 biological evaluations reviewed, all applicable threatened, endangered, and sensitive species were not addressed. The specifics are as follows.

- Deerfield Ranger District

  The Stoutameyer Ruffed Grouse Habitat Improvement Project Biological Evaluation listed no (emphasis added) threatened, endangered, and sensitive species despite the fact that the primary purpose of the project was to create and sustain an animal habitat (for grouse). The FLRMP listed 33 threatened, endangered, and sensitive species that were known to occur on the Deerfield Ranger District and another 94 threatened, endangered, and sensitive species that were likely to be present. The biological evaluation stated that suitable habitat existed for several threatened, endangered, and sensitive species which were identified after reviewing various lists and conducting a field survey of the proposed project area. (See Site Surveys below.) The biological evaluation further stated that threatened, endangered, and sensitive species known to occur on the district had unique habitat requirements, such as shale barren caves or wetlands. It concluded that no threatened, endangered, and sensitive species were found to occur within the project area. However, there was no mention of the specific identified species that could be present or were surveyed for.

  Our review of the FLRMP disclosed that besides the cited unique habitat, other threatened, endangered, and sensitive species (e.g., white monkshood, peregrine falcon and Canada plum) preferred mountain tops, mesic woodlands, rock outcrops, riparian areas, etc. Some of these habitats were present in the project area. The district biologist stated that he did not discuss all the threatened, endangered, and sensitive species because he wanted to keep the document brief and everything that occurred in this area was addressed toward ruffed grouse habitat management.

- Clinch Ranger District

  The biological evaluation did not address 52 of 62 threatened, endangered, and sensitive species which could occur in the project area. All species were not addressed primarily because the biological evaluation covered an 8,724 acre opportunity area in which a number of timber sales were to occur. Also, even though the biological evaluation stated that site specific surveys for threatened, endangered, and sensitive species be conducted during project layout, they were not conducted. (See Site Surveys below.)

[14] Forest Service Manual 2600, § 2672.42, effective June 1, 1990.

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EXHIBIT G
BIOLOGICAL EVALUATIONS

The following table shows six other questioned biological evaluations regarding threatened, endangered, and sensitive species that were not addressed.

District	Environmental Analysis	Total Threatened, Endangered, and Sensitive Species	Addressed	Not Addressed
Black Creek	Compartment 205	25	3	22
Black Creek	Compartments 254 and 255	19	2	17
Black Creek	Compartment 261	19	3	16
Marlinton	Brushy Mountain	29	25	4
Marlinton	Elk Mountain	28	27	1
Deerfield	Dowell's Draft	127	2	125
		247	62	185

Site Surveys Not Performed or Documented

The Black Creek, Clinch and Deerfield did not perform or document site specific surveys for threatened, endangered, and sensitive species as stated in 6 biological evaluations (Black Creek-3; Clinch-1; Deerfield-2). The specifics are as follows.

- Black Creek Ranger District

  The district biologist did not perform a botanical survey for any of the three biological evaluations reviewed. The biological evaluations provided that several sensitive plant species were in the project area. However, no surveys were performed. The surveys were necessary, in part, because the environmental assessment referenced the vegetative management environmental impact statement which stated that "when adequate population inventory information is unavailable, it must be collected when the site has a high potential for occupancy by a threatened, endangered, proposed, or sensitive species." Secondly, when the information reported the presence of a threatened, endangered, and sensitive species, the biologist did not verify the presence or absence of threatened, endangered, and sensitive species. Specifically, a report from the Natural Heritage data files[15] disclosed that two sensitive needle palms were located in the project area. However, the biologist did not verify their actual existence. Our field visit disclosed that one of the cited plants was not a needle palm and the second could not be located. Finally, the biological evaluation showed that the sensitive species lived in moist areas where no activities would occur. The biologist cited this as the primary reason for not conducting the surveys.

[15] Natural Heritage is a State Agency which collects and records sightings of threatened, endangered, and sensitive species from a variety of sources. The agency's data base is routinely used by Forest Service biologists as a source for determining known sightings of threatened, endangered, and sensitive species when preparing a biological evaluation.

However, the environmental assessment also provided that trees could be marked and harvested within the protected stream area if "they can be cable winched and will not fall in protected streams." Unless threatened, endangered, and sensitive plants are identified and protected, they could be destroyed by timber harvesting activities.

- Clinch Ranger District

  The biological evaluation provided that in addition to the possibility of water quality degradation, the proposed timber sales have the potential of causing physical damage and/or modifying local habitat areas to the extent they are no longer suitable for listed sensitive plant and animal species. The biological evaluation also provided that "physical destruction or habitat alteration will be avoided by conducting a site specific survey of suitable habitat areas during the project layout phase for each planned activity, and dropping occupied sites from the project." The district biologists stated that they were not aware that the site specific surveys were to be conducted. They said that they were not present when the biological evaluation was written, and no one had advised them of the provision. When we advised the regional forester that the surveys had not been performed, he immediately suspended the applicable timber sales and directed that the site surveys be performed.

- Deerfield Ranger District

  Both biological evaluations reviewed showed that field surveys were conducted of the proposed project area. However, the district biologist could neither locate his field notes nor explain the specific threatened, endangered, and sensitive species that he surveyed for. Without any supporting documentation, Forest Service would be hard pressed to support its decisions with either the public or the courts if its decisions were appealed.

Improper Use of Information

The Marlinton and Black Creek Ranger Districts improperly used internal or external documents as a basis to dismiss or not survey for threatened, endangered, and sensitive species even though suitable habitat was present. The specifics are as follows.

- Marlinton Ranger District

  The Monongahela National Forest had developed a "Likelihood of Occurrence Table" which was to be used by biologists to identify threatened, endangered, and sensitive species which may occur in a project area. Marlinton district personnel stated that they had used this table for about 4 years. We concluded that the district was improperly using the table to exclude some threatened, endangered, and sensitive from detailed analysis. For example, the district did not discuss the eastern cougar in its biological evaluations despite the fact that suitable habitat was available and the presence of a "catlike" creature had been reported in the area. District personnel stated that they had been unable to confirm any of the reported sightings and to the best of their knowledge, the eastern cougar had to be expatriated from the area. However, at least one appellant had used the lack of discussion and surveys for the eastern cougar in an appeal regarding timber sales on this forest. We believe that, at a minimum, the above facts concerning the eastern cougar should have been discussed in the biological evaluation.

EXHIBIT G
BIOLOGICAL EVALUATIONS

- Black Creek Ranger District

  The district inappropriately relied on a letter from Natural Heritage to draw the conclusion that the proposed timber sales would have no adverse effect on any threatened, endangered, or sensitive plants or animals. The letter showed that Natural Heritage's database contained no information regarding any threatened, endangered, and sensitive plants or animals being known to occur within the project area, other than the gopher tortoise. However, we noted that the letter also contained the following disclaimer "* * * most natural areas in Mississippi have not been thoroughly surveyed." As a result of the disclaimer, we concluded that the letter should not have been used for a negative assurance regarding threatened, endangered, and sensitive species.

EXHIBIT H
DECISION NOTICES

This exhibit provides additional information concerning Conclusion No. 5 where decision notices were incomplete.

The decision notice is defined as a concise written record of a responsible official's decision based on an environmental assessment and "Findings of No Significant Impact."[16] The purpose of the decision notice is to provide the public with a clear idea as to what the decision is and the rationale behind the decision. This is important because decisions which are "arbitrary and capricious" are in violation of the Administrative Procedure Act. Thus, the decision notice must demonstrate that the decision maker considered the relevant factors and based his/her decision on those factors. The Forest Service handbook[17] provides a format for presentation of the decision notice. The decision notice includes discussions of (a) the decision, (b) the rationale for the decision, (c) the alternatives, (d) the findings required by other laws, (d) finding of no significant impact, (e) project implementation, and (f) appeal rights.

The following provides additional information on the 12 decision notices reviewed. It also expands on some of the examples contained in Conclusion No. 5.

Findings Required By Other Laws and Regulations

NFMA requires the decision maker to make determinations concerning consistency with the forest plan, vegetative manipulation, silvicultural practices, appropriateness of even-age management and, where used, that clearcutting is the optimum harvest method.

For example, the decision notice for the Compartment 205 (Black Creek Ranger District) stated "The activities in this decision that involve vegetative manipulation of tree cover comply with the following seven requirements found at 36 CFR 219.27(b) * * *." The seven requirements were then listed. Similarly, the other decision notices (Laurentian Ranger District) simply stated that "All vegetation manipulation in this Opportunity Area will comply with the seven requirements of 36 CFR 219.27(b). This is based upon review of the environmental assessment and the site specific conditions of vegetative management practices." However, no explanations or references to the environmental assessments were provided in any of these decision notices.

To illustrate, one of the seven vegetative management requirements provided that the lands would be adequately restocked within 5 years of final harvest. To make a statement of compliance, the regulations provided that timber cutting shall be made in such a way as to assure that the technology and knowledge exists to adequately restock the lands within 5 years after final harvest. Research and experience shall be the basis for determining whether the harvest and regeneration practices can be expected to result in adequate restocking. The regulations go on to define adequate restocking. Since the decision notices neither explained nor referenced the environmental assessment, we considered Forest Service's statement that this requirement had been met as unsupported.

General Omissions

[16] 36 CFR 215.2, July 1995.

[17] Forest Service Handbook 1909.15.43.21, effective September 21, 1992.

EXHIBIT H
DECISION NOTICES

Required items were generally omitted from the decision notices reviewed. The most common omissions involved alternatives considered and not selected and appeal rights.

- Alternatives Considered and Not Selected

  The alternative or the reason why the alternative was not selected was not clearly presented in 6 of the 12 decision notices reviewed. Forest Service handbooks[18] and other guidance contain examples showing that alternatives considered should be briefly discussed and a nonselection explanation should either be included in the "Reason for the Decision" or "Alternatives Considered" section of the decision notice. This information is important in providing the public with an understanding regarding what alternatives were considered and the rationale used for not selecting a specific alternative.

  For example, two decision notices (Laurentian Ranger District) discussed, in the "Reason for the Decision" section, the alternative for each major issue. Depending on the issue, a different alternative was better suited for accomplishing that specific issue. To illustrate, Alternative 3 best met the recommended guidelines for various "wildlife indicator species" while Alternative 2 provided the most wood fiber and financial return. The decision notice concluded that Alternative 4 (selected alternative) provided the best mix of resource outputs. However, there was no discussion regarding why the other alternatives were not chosen.

  In another example, Stoutameyer Ruffed Grouse Decision Notice (Marlinton Ranger District) considered four alternatives. Alternatives 1 (no action) and 4 (modified shelterwood) were excluded because they either did not provide sufficient age class distribution or would not generate sufficient stems for suitable grouse habitat. However, there was no discussion regarding why Alternative 2 was not selected. Alternative 2 included clearcutting 40 less acres and the construction of no roads instead of .6 miles which would be required under Alternative 3, which was selected.

- Appeal Rights

  We discussed in the conclusion how eight of the decision notices contained only basic information, such as a reference to the applicable CFR. The following is an example from the Nevada City Ranger District (Madrone project) decision notice. This example provides the reader with the specific information which an appeal must meet.

  > *An appeal must meet the following requirements: 1) that the document is an appeal pursuant to 36 CFR 215; 2) the appellant's name, address, and telephone number; 3) identify the decision being appealed (include the title of this document, its date, and the name and title of the Responsible Officer who signed it); 4) identify the specific change(s) in the decision that appellant seeks or the portion of the decision to which the appellant objects; and 5) state how the Responsible Official's decision fails to consider comments previously provided, either before or during the 30-day comment period and if applicable, how the*

[18] Forest Service Handbook 1909.15.43.21, effective September 21, 1992.

appellant believes the decision violates law, regulation or policy.

- Additional Omissions

  In addition to the items cited above, two decision notices (Deerfield Ranger District) did not (a) give the exact location of the project (e.g., counties or compartment numbers), (b) discuss the appropriateness of even-aged management on the project area, (c) make sufficient reference to the environmental assessment or the biological evaluation to support the discussion of how the decision was made, and (d) include mitigating measures.

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EXHIBIT I
FINDINGS OF NO SIGNIFICANT IMPACT

This exhibit provides additional information (not previously presented in Conclusion No. 6) where "Findings of No Significant Impact" were incomplete.

The "Finding of No Significant Impact," is a document that briefly presents the reasons why an action (e.g., timber sale) will not have a significant effect on the human environment and for which an environmental impact statement will not be prepared.[19] Significance is determined by analyzing context (scope) and intensity. The context for a site-specific action would usually depend upon the effects in the locale rather than the world as a whole. An intensity analysis deals with the following 10 specific items.[20]

(a) both beneficial and adverse impacts,

(b) the effects on public health and safety,

(c) the unique characteristics of the geographic area,

(d) whether the effects on the quality of the human environment are highly controversial,

(e) if possible effects on the human environment are highly uncertain or involved unique/unknown risks,

(f) the degree of the action establishing a precedent for future actions with significant effects,

(g) whether an action is related to other actions with individually insignificant, but cumulatively significant impacts,

(h) the effect on scientific, cultural, or historical resources,

(i) effect on endangered or threatened species or habitats, and

(j) whether the action threatens a violation of environmental laws or requirements.

Our review of 12 "Findings of No Significant Impact" disclosed that while 10 of them listed one or more of the intensity items, there was neither a discussion of how the conclusion was reached nor a reference to the applicable supporting data in the environmental assessment. For example, one "Finding of No Significant Impact" stated that public health and safety are minimally affected by the project without any reference being made to supporting documentation. Six of the twelve "Findings of No Significant Impact" did not include the intensity item concerning impacts that may be both beneficial and adverse. This is an important item as it briefly informs the public of the project's advantages and disadvantages. To illustrate one "Finding of No Significant Impact" presented as part of its discussion for this item, this statement:

> *The impacts of this project will be beneficial in the long term. This project will reduce the existing fire hazard in the area through use of controlled burns, vegetative manipulation to reduce the fire ladder complex and the development of defensible fire protection zones around the Protected Activity Centers (PACs) for Spotted Owls.*

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[19] 40 CFR 1508.13, effective December 1994.

[20] 40 CFR 1508.27, effective December 1994.

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EXHIBIT I
FINDINGS OF NO SIGNIFICANT IMPACT

This was followed by a reference to specific pages in the environmental assessment. While this does present the advantages, it does not show any disadvantages.

In addition, the two "Findings of No Significant Impact" reviewed for the Laurentian Ranger District neither listed (or discussed) any of the 10 intensity items, nor included the required statement that an environmental impact statement would not be prepared. The district ranger stated that this occurred because they were trying to achieve brevity, but leaving the statement out was an oversight.

At one ranger district (Nevada City), our review disclosed improvement in the "Finding of No Significant Impact" which was prepared after training had been received. However, we still found that 4 of the 10 intensity items (d, e, f, and h) were not cross-referenced to either the environmental assessment or other supporting documentation.

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EXHIBIT J
GLOSSARY OF TERMS

Alternatives - Propositions or situations offering a choice of management plans, only one of which may be chosen.

Best Management Practice - A practice or combination of practices that is determined to be the most effective and practical means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.

Biological Evaluation - An identification and analysis of threatened, endangered, and sensitive species occurring in a project area and an assessment of the impact of forest service actions on threatened, endangered, and sensitive species.

Board Foot - A unit of timber measurement which represents a board that is 1-inch thick, 12 inches wide, and 12 inches long.

Clearcutting - The removal in a single harvesting operation of all trees in a stand.

Compartment - An organizational unit or smaller subdivision of the total forest area identified for the purposes of administration, management, and silvicultural operations. The area is generally defined by natural features such as ridges or streams and is approximately 1,000 acres in size.

Critical Habitat - For listed species, the critical habitat consists of (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Act, on which are found those physical or biological features (constituent elements); (a) essential to the conservation of the species and (b) which may require special management consideration or protection, and (2) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Cumulative Effect - The effect on the environment which results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

Decision Notice - A concise written record of a responsible official's decision based on an environmental assessment and "Finding of No Significant Impact."

Endangered Species - Any species which is in danger of extinction throughout all or a significant portion of its range.

Environmental Assessment - A concise public document that provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement or "Finding of No Significant Impact."

Environmental Impact Statement - A detailed written statement required by the National Environmental Policy Act of 1969 for major Federal actions that may have a significant effect on the human environment.

Even-Aged Management - The combination of actions that results in the creation of stands in which trees of essentially the same age grow together.

Forest Land and Resource Management Plan - A plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and

establishes management activities, standards, and guidelines for the National Forest System lands of a given national forest.

Heritage/Cultural Resources - The physical remains of human cultural systems and conceptual context of an area which is useful or important for making land-use decisions. The remains include such items as artifacts and ruins, whose contents were significant in an historic, prehistoric, legendary, or sacred context to the culture.

Intermittent Stream - A stream that flows seasonally in response to a fluctuating water table, with a scoured channel that is at least 3 feet wide.

Likelihood of Occurrence Table - A table that lists threatened, endangered, and sensitive species and assesses the potential (based on species needs and habitat requirements) for the species to occur in the project area.

Mitigation Measures - Measures which avoid, minimize, rectify, reduce, eliminate, or compensate for the impact of the action (e.g., timber sale) on the environment.

Perennial Stream - A stream that flows year-round with a scoured channel that is always below the water table. Includes streams in which flow is subsurface between pools that support fish.

Riparian Area - An area with distinctive resource values and characteristics that is comprised of aquatic and riparian ecosystems, 100-year flood plains, and wetlands, to include all upland areas within a horizontal distance of approximately 100 feet from the edge of perennial streams or other perennial water bodies.

Scoping - Process used by the Forest Service to find out what the public issues are and how the public feels about a specific action or project.

Sensitive Species - Those plant and animal species identified by the regional forester or forest supervisor for which population viability is a concern as evidenced by significant current or predicted downward trends in (a) population numbers or density, or (b) habitat capability that would reduce a species' existing distribution.

Slash - Woody material left after logging, pruning, thinning, brush cutting, or other management activities and/or accumulated as a result of storm, fire, or other damage.

Stand - A contiguous group of trees sufficiently uniform in species composition, arrangement of age classes, and condition to be a homogeneous and distinguishable unit.

Stream Management Zone - An administratively designated zone along a stream designed to call attention to the need for special management practices aimed at the maintenance and/or improvement of watershed resources.

Threatened Species - Any species of plant or animal which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Visual Quality Objective - The degree of acceptable alteration of the landscape. The system contains four categories of landscape management: preservation, retention, partial retention, and modification. When one of these categories is

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assigned to an area of the forest, any changes made in the appearance of that area must be in line with the assigned category. The preservation category allows no man-caused changes in the landscape. At the other end of the scale, modification allows man's activities to be dominant features in the landscape.

Water Bar - A soil erosion control structure that breaks up the straight-line flow of water down a hill and diverts it to the side of the road.

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Legal Backgrounder

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FAULTY AGENCY SCIENCE UNDERMINES MANAGEMENT OF NATURAL RESOURCES

by

Gary G. Stevens

Each year hundreds of administrative appeals and scores of lawsuits are filed challenging the ways the U.S. Forest Service and other federal agencies manage or fail to manage our national forests and the wildlife that live there.[1] Typically, this high stakes litigation generates considerable emotion from environmental activists on the one hand, and affected businesses and communities which are often dependent on these resources for their livelihoods, on the other. Nevertheless, all of the parties agree on one guiding principle — that good science is the necessary foundation for resolving these conflicts. This can create a serious burden for government wildlife scientists, who must strive to put their personal values aside in the interest of producing the best objective science. This increasingly appears to be too much to ask of mere mortals. Courts, therefore, must find effective ways to ensure that the wildlife science at the heart of these disputes remains objective and reliable. To do this successfully, courts must steer a careful course between respecting agency discretion and rigorously testing the methodology and assumptions underlying agency science.

The Bald Mountain Case. In 1992, the Wetsel-Oviatt Lumber Company, a small business dependent on timber from the national forests, was the highest bidder on a sale of Bald Mountain timber from the Eldorado National Forest in California. The Bald Mountain sale, like all Forest Service timber sales, had undergone an extensive environmental analysis and approval process prior to the bidding. Nevertheless, Wetsel-Oviatt was denied the award of the sale on the grounds that after the bidding was completed, additional studies by Forest Service wildlife biologists had found that harvesting the sale would result in unacceptable damage to wildlife habitat. Wetsel-Oviatt disputed these findings and filed a bid protest lawsuit in the U.S. Court of Federal Claims in 1994. After a four-year court battle, the company ultimately prevailed because the court found that the science the Forest Service used to justify cancellation of the sale lacked a rational basis and appeared biased by the "personal predilections" of administrative

[1]The United States Forest Service alone manages 192 million acres of land. "Approximately 100 Draft Final Environmental Impact Statements (EIS), 5,200 Environmental Assessments (EA), and 9,800 Categorical Exclusions (CE) are produced annually by the Forest Service, more than produced by any other Federal Agency, which guide management of [our] National Forests and Grasslands." USDA Forest Service NEPA, NFMA and Appeals Homepage (www.fs.fed.us/forum/NEPA/aboutnepanfma.html). Each of these actions is subject to administrative appeal and court challenges.

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officials and government scientists. *Wetsel-Oviatt Lumber Co., Inc. v. United States*, 40 Fed. Cl. 557, 570-71 (1998).

The Bald Mountain case illustrates the difficulty in evaluating agency science in natural resource litigation and one court's solution to that problem. The studies which the government relied upon were conducted by Forest Service wildlife biologists and ecologists who had devised a formula called the "disturbance index." The formula purportedly used compatible and reliable data to project the likely impact of the proposed timber harvest on the habitat of the California spotted owl and the Pacific fisher and on Late Seral Forest (*i.e.*, patches of old forest) within the Bald Mountain sale area. If the index yielded a value of 5% or more, it was assumed that the disturbance caused by the timber harvest would have an unacceptable impact.

On the surface the "disturbance index" methodology looked detailed and impressive. In reality it was neither. Over the objections of the government, Wetsel-Oviatt was granted thorough discovery of the administrative record, including access to the underlying data used by the government scientists to construct the index. This discovery ultimately revealed that the government scientists knew that their data was erroneous and biased. In addition, the 5% disturbance index threshold had no basis in wildlife biology. In several instances the Forest Service ecologist who developed much of the underlying data rejected data presented to her by respected outside contractors and other scientists within the Forest Service, and replaced it with her own because their information was not compatible with her ultimate objectives. 40 Fed. Cl. at 566-68. The court concluded:

> Whether or not the degree of error was known to the Forest Service, the Forest Service ignored the error in conducting their environmental analyses of the effects of the Bald Mountain timber sale, so long as the Forest Service personnel believed that the results of the analyses would lead to a conclusion that overstated the effects of the Bald Mountain timber sale upon the environment. . . . "The law of procurement does not tolerate 'actions reflecting personal predilections of administrative officials, whether ascribable to whim, misplaced zeal, or impermissible influence.'" *Parcel 49C Ltd. Partnership*, 31 F.3d at 1153 (*quoting M. Steinthal & Co. v. Seamans*, 455 F.2d 1289, 1305-06 (D.C. Cir. 1971)).

Id. at 570-71. Without extensive discovery and a thorough probing of the administrative record, Wetsel-Oviatt would never have uncovered the defective science used to justify cancellation of the sale. The court's willingness to allow this thorough probing was crucial to the outcome of the case.

Even more importantly, had the Forest Service wildlife biologists initially made their underlying data and methodology available for public scrutiny and meaningful peer review outside the agency, the flaws in their science might very well have been revealed and either remedied or an alternative approach adopted without any litigation. Apart from saving the time and expense of the prolonged bid protest lawsuit,[2] careful public scrutiny of this science before the decision was taken to cancel the timber sale would have strengthened rather than undermined public trust in the Forest Service's science.

The Hatchery Salmon Case. In a recent case arising under the Endangered Species Act (ESA), the court rejected an attempt by the National Marine Fisheries Service to exclude hatchery-spawned coho

[2]In an out-of-court settlement, Wetsel-Oviatt was subsequently able to collect the majority of its legal fees and expenses from the government.

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salmon from naturally spawned coho salmon in deciding to list the coho salmon as threatened under the ESA. *Alsea Valley Alliance v. Evans*, 161 F. Supp. 2d 1154 (D. Or. 2001). The ruling rested on a finding that the agency scientists' declarations established no valid scientific basis for distinguishing the two categories of coho, and created "the unusual circumstance of two genetically identical Coho salmon swimming side-by-side in the same stream, but only one receives ESA protection while the other does not." *Id.* at 1163. The court found this arbitrary and capricious and directed the agency to reconsider its action based upon "the best available scientific information, including the most recent data" in any further listing of the salmon.[3] *Id.* at 1164.

In reaching this decision the court acknowledged its obligation to give deference to agency decisions but also to subject them to a "probing, in-depth review." 161 F. Supp. 2d at 1159. This court, like the court in the Bald Mountain case, saw no conflict in allowing litigants, where necessary, to closely scrutinize the work done by agency scientists to determine whether agency action was based on sound science and objective analysis.

The Missing Lynx and Shortnose Suckers. Within the last twelve months, two separate actions by government biologists involving the Canada lynx and the shortnose sucker fish gained notoriety and cast doubt on the credibility and reliability of federal wildlife science. The lynx incident occurred when two government wildlife biologists submitted samples of hair from the endangered Canada lynx as part of a lynx survey being conducted by state and federal agencies. The samples were falsely labeled as coming from Washington State forests, when in fact they were laboratory samples. When the hoax was discovered, the biologists said that they were only testing the laboratory's ability to analyze the lynx DNA. Regardless of their actual motivations, the biologists admitted that they did not follow appropriate protocols and were not authorized to test the laboratory. No actual harm occurred, but the incident caused an uproar among both those who think that the Endangered Species Act is being used improperly to advance a preservationist agenda. With the management of millions of acres potentially at stake, biologists collecting and analyzing the crucial underlying data for these decisions must be entirely credible and above any suspicion of bias. No litigation has arisen from this incident, but one can be certain that when federal regulators make their next decision on the endangered lynx, the underlying data will be intensely scrutinized.

The endangered shortnose sucker and other fish inhabiting the Klamath River Basin in Oregon became the subject of controversy in the spring of 2001. The U.S. Fish & Wildlife Service released a biological opinion finding that the suckers would be in jeopardy if the water levels in the Upper Klamath Lake and the Klamath River were allowed to decrease in order to provide the many farms in the Basin with water. On the one side environmental activists, fishermen and Native American tribes argued that the ecology of southern Oregon and northern California would suffer great injury if the water levels were lowered. On the other side farming communities stated they would be financially ruined if they were deprived of water to irrigate their land during the drought-stricken summer of 2001. Based on the biological opinion, the Bureau of Reclamation drastically reduced the irrigation available to farmers, many of whom suffered severe economic injury or went out of business.

In the fall of 2001, at the request of the Department of the Interior, the National Academy of Sciences analyzed the biological opinion. The Academy reviewed the same information available to the government scientists who authored the biological opinion and bluntly concluded that "there is no substantial scientific foundation at this time for changing the operation of the Klamath Project to maintain higher water levels" in either the river or the lake as a means to protect the endangered sucker or other

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[3]The Endangered Species Act requires that listing decisions be made "solely on the basis of the best scientific and commercial data available." 16 U.S.C. § 1533(b)(1)(A).

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threatened fish populations. *Scientific Evaluation of Biological Opinions on Endangered and Threatened Fishes in the Klamath River Basin: Interim Report* (2002), National Academy of Sciences, Washington D.C. at 3. Although this may not be the last word, the Academy's report exposed the serious shortcomings of the science the agency used to justify a change in water flow which had dire consequences for many farming communities in the Klamath Basin. This is another instance where faulty agency science resulted in a disastrous resource management policy, which may have been avoided if that science had been exposed to public scrutiny at an earlier stage.[4]

The* Daubert *Principles and the Data Quality Act: Available Tools for Improving Agency Science. In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 597 (1993), the Supreme Court endorsed the "gatekeeping" function of federal judges to screen out expert testimony based on unsound science. The Supreme Court has recommended that the *Daubert* inquiry should begin with "a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts at issue." 509 U.S. at 593. In turn this may require determining whether the theory in question is falsifiable and whether it "has been subjected to peer review and publication." *Id.* Courts and agencies should ask these same questions about agency science when it is used to justify significant natural resource management decisions. Courts should also ensure that litigants are afforded a reasonable opportunity to use discovery to probe the administrative record whenever doing so is necessary to test the reliability of the science. Adopting these principles will do much to improve the quality and objectivity of the government's natural resource science.

The Office of Management and Budget (OMB) has recently issued new federal guidelines under the Information Quality Act, Public Law 106-554 (2000), to ensure that federal agencies disseminate and utilize better quality scientific data. 67 Fed. Reg. 369 (Jan. 3, 2002). By October 1, 2002 all federal agencies must issue their own guidelines or adopt those of OMB. *Id.* Among other points, the OMB Guidelines require the use of the "best available science" and sound statistical methods in developing data. *Id.* at 373. Under the Act, agencies must correct information that does not comply with the Guidelines, and an agency's failure to do so could be challenged in court. *See OMB Guidelines on Quality of Information Seen as Having Profound Impact on Agencies*, DAILY ENVT. REP. (BNA), Jan. 14, 2002; *EPA Proposed Guidance on Data Quality Draws Fire From Industry, Advocacy Groups*, DAILY ENVT. REP. (BNA), June 24, 2002. This Act and the OMB Guidelines could be potentially significant in the effort to ensure the integrity of agency science.

Conclusion. Courts and agencies have the tools they need to safeguard the integrity of the science which forms the foundation for federal natural resource policies. The wise use of these tools will mean greater public trust of the regulatory process, and consequently more support for the many difficult natural resource management decisions that inevitably lie ahead.

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[4]A coalition of farmers and other water users has now filed a lawsuit seeking approximately $1 billion in compensation for the taking of their water rights under the Fifth Amendment to the U.S. Constitution. *Klamath Irrigation District v. United States*, United States Court of Federal Claims No. 01-591L (filed Oct. 11, 2001).

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