

GAO

Report to Congressional Requesters

April 1986

# TIMBER SALE ACCOUNTING

## Analysis of Forest Service's Proposed Timber Program Information Reporting System



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United States  
General Accounting Office  
Washington, D.C. 20548

Accounting and Financial  
Management Division

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April 4, 1986

The Honorable Sidney R. Yates  
Chairman,  
The Honorable Ralph Regula  
Ranking Minority Member,  
Subcommittee on Interior  
and Related Agencies  
Committee on Appropriations  
House of Representatives

In a letter dated July 30, 1985, you asked us to review the Forest Service's development of a timber cost accounting system. The conference report on Public Law 98-473, providing continuing appropriations for fiscal year 1985, directed the Forest Service to develop an expanded accounting system that would accomplish certain specified objectives. You asked us to determine whether the Service is proceeding adequately in developing the system and to recommend any changes that may be required to improve its system development activities. As agreed upon with your office, we have monitored the progress of the task force established by the Forest Service to develop the system, and we have provided your staff periodic briefings on the results of our work. As further agreed upon, we are now providing the results of our preliminary analysis of a working draft of the "Forest Service Timber Sale Program Accounting Report to Congress," which the Forest Service submitted to us on March 17, 1986.

The Forest Service has proposed what it refers to as a Timber Sale Program Information Reporting System. Basically, data from the Service's existing accounting system and other sources will be used to develop reports on timber sale costs and benefits. The draft proposal we received described the reports as follows:

1. Source and application of funds. This report will display the annual timber sale program cash flow based on data contained in the accounting system.
2. Financial investment characteristics. This report is designed to show what the prudent investor would pay for the area just harvested, after all timber has been removed. This is thought to represent the value of the rights to future timber.

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3. Economic investment characteristics. This report takes the information in the financial investment characteristics report and adds information on nontimber benefits and management cost savings that result from harvest. Nontimber benefits include items such as providing forage for cattle or recreation opportunities. Values are computed for the benefits, and the results are projected for a 50-year time span.

4. Progress report. This report compares the outputs planned for the year, such as millions of board feet, animal unit months, etc., as found in the forest's land management plan with the harvest and outputs claimed for the current year.

As indicated, the Service proposal would first attempt to identify and report separately those items that lend themselves to financial measurement—timber revenues and direct costs—and then provide supplementary data on items of a less objective nature, such as benefits to other areas of forest management. This approach is aimed at satisfying the Congress' need for additional information on timber sales, yet recognizing that the forests are to be managed for recreation, watershed, wildlife, fish, and range, as well as timber. We agree with the approach in this regard because of the interrelationships of the six management areas and the need to evaluate the Service's activities from an overall perspective. We further agree that the allocation of some of the indirect or joint costs may be so subjective and subject to differing interpretations that to try to allocate them to any one of the management areas would be misleading.

However, based on our review of the Forest Service working draft and based on work we have conducted at Forest Service headquarters and the Mt. Hood National Forest, we believe that the proposed Timber Sale Program Information Reporting System will not be fully responsive to the directive in the conference report for a complete cost accounting system that will compare actual costs and benefits. We believe that the Forest Service has placed emphasis on formatting a new series of external reports that will be of only limited use in managing the timber sale program. Redefining certain system elements and then integrating the timber sales management and accounting systems from which these reports will flow would contribute to better managing the program. Better use of the existing accounting system could also enhance the information for managing other aspects of the forests. We are not making specific recommendations at this time since we received a working draft and because of the limited time available to review the

document. Our primary concerns, which arose in reviewing the Forest Service draft proposal, are the following:

- The system may not account for all costs. It does not clearly define the costs to be accounted for, it excludes some costs entirely, and it uses average costs instead of actual costs for some others.
- The existing accounting system, which the Forest Service will rely on for cost data, distributes some costs on an estimated rather than actual basis and, therefore, may not provide accurate cost information.
- The proposed methods of accounting for such items as depreciation will not conform with generally accepted government accounting principles and standards in all key respects, and reported costs may be distorted as a result.
- The level of reporting and accounting proposed may not provide sufficient detail for the Congress and the Forest Service in managing the timber sale program.
- The methods for calculating benefits, a highly subjective area, have not been specified, and accurate forest use data on which to base the computations are not available in all cases. Furthermore, assigning dollar values to some benefits of an elusive nature—such as the value of an afternoon spent fishing—may lead to the erroneous perception that the values reported represent real dollar returns.

Each of these concerns is described in greater detail in appendix II

The Forest Service has made some progress in developing a system of reports that will begin to identify the costs of the timber sale program. However, given the objectives of the accounting system contained in the conference report, we do not believe that such an approach will adequately respond to the congressional oversight needs

Appendix I provides background information and a description of our objectives, scope, and methodology. Appendix II discusses our specific concerns with the Forest Service's proposed Timber Sale Program Information Reporting System

As agreed with your office, we have not obtained formal Forest Service comments on this report. However, we have discussed our work and concerns with Forest Service officials. Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30

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days from the report date. At that time, we will distribute copies to the Forest Service and other interested parties.

  
*for* Frederick D. Wolf  
Director



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# Contents

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## Letter Report

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### Appendix I Background and Objectives, Scope, and Methodology

Timber Sales  
Objectives, Scope, and Methodology  
Mt. Hood National Forest

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### Appendix II GAO Concerns on the Forest Service Proposal

Proposed Reporting System  
All Actual Costs May Not Be Accounted For  
Cost Data Not Fully Accurate  
Lack of Conformity to Accounting Principles and  
Standards  
Reporting Costs and Benefits at the Forest Level Will Not  
Meet Objectives  
Lack of Information on Benefit Computations

---

## Table

Table I.1: Fiscal Year 1985 Timber Sales

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## Figures

Figure I.1: Mt. Hood National Forest  
Figure II.1: Estacada Ranger District Compartments

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### Abbreviations

ASA All Service Accounting  
IG inspector general



# Background and Objectives, Scope, and Methodology

The National Forest System is divided into nine geographic regions. Each region consists of several forests, and each forest is divided into a number of ranger districts for management purposes. The Service manages about 191 million acres of national forest system land, 87 percent of which is in the western United States.

The Forest Service uses a land and resource management planning process to determine how these resources can be best used. This planning process requires the preparation of a forest plan for areas within the jurisdiction of a forest supervisor. An interdisciplinary team develops the forest plan and its related Environmental Impact Statement. The forest supervisor selects the preferred forest management alternative for the forest plan. The forest plan describes how the forest will be managed for such resources as recreation, range, timber, watershed, wildlife and fish. Forest planning regulations state that these renewable resources are to be provided in the combination that will best meet the needs of the American people, and not necessarily in the combination that will give the greatest dollar returns or the greatest unit output.

## Timber Sales

The Department of Agriculture's Forest Service annually sells billions of board feet of timber from its national forest lands. As table I.1 shows, in 1985 there were 366,874 timber sales, 1,199 of which were for over 2 million board feet. (A board foot is a piece of wood one inch thick by one foot wide, by one foot long.)

**Table I.1: Fiscal Year 1985 Timber Sales<sup>a</sup>**

	Number of board feet in the sales <sup>b</sup>				
	Total <sup>c</sup>	Less than 2 million	2 million to 5 million	5 million to 15 million	More than 15 million
Number of sales	366,874	365,675	562	595	
Volume (billion board feet)	10.8	3.1	1.9	5.1	
Value (dollars in millions)	\$558.2	\$95.0	\$100.2	\$314.5	\$

<sup>a</sup>Excludes 225,493 sales of nonconvertibles (Christmas trees, cones, burls, etc.)

<sup>b</sup>The Estacada Ranger District, Mt. Hood National Forest, does not attempt to individually manage a sale regardless of size. Instead, it manages each sale over 2 million board feet as a separate project. It manages sales below 2 million board feet by consolidating them into three different groups: small program, salvage sale program, and miscellaneous product program.

<sup>c</sup>Totals may not add due to rounding.

In making a timber sale, the Service incurs costs for a variety of activities. These include determining the timber volume in a potential sale area, preparing logging and transportation plans, and appraising the timber. The timber is sold to the highest bidder under competitive bidding procedures.

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**Below-Cost Timber Sale  
Issue**

Costs and revenues of service timber sales have become a major issue in national forest management. Both government and private reports have been issued showing that for many sales, the costs involved in selling the timber exceeded the revenue received from the sale. Although existing law does not require the Forest Service to recover its costs on individual sales, since fiscal year 1981, the House appropriations committee has expressed increasing interest in obtaining cost data showing which sales were below cost.

We issued a report on below-cost timber sales in 1984.<sup>1</sup> The report provided an analysis of some sales (below-cost) conducted in 1981 and 1982 in which Service costs associated with these sales exceeded the contracted sales prices by about \$156 million. Overall, the revenues received by the Service exceeded costs by \$712 million. The report recognized that below-cost sales may provide benefits in line with the Service's multiuse mandate and concluded that the Congress should decide whether cost recovery is necessary. The report also stated that to address that question effectively, the Congress needed more complete and reliable financial information than the Service was already providing.

A review of recent Forest Service hearings before the House Committee on Appropriations, Subcommittee on the Department of the Interior and Related Agencies, shows the concerns raised about the incidence of below-cost timber sales. In the fiscal year 1985 hearings, the subcommittee chairman expressed serious concern over reports that the Forest Service was losing over \$100 million in uneconomic timber sales. The chairman expressed interest in eliminating such sales.

Seeking information about below-cost sales during the fiscal year 1986 hearings, the committee asked the Forest Service to provide a listing by region of the number of sales that were above and below total Forest

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<sup>1</sup>Congress Needs Better Information on Forest Service's Below-Cost Timber Sales (GAO/RCED-84-96, June 28, 1984)

Service costs in preparing and offering the sales in fiscal year 1984. In its reply, the Forest Service stated:

“Neither the Forest Service nor private industry routinely tracks costs on individual sales. The large number of sales—500,000 per year—make this difficult. As the task force tests and evaluates the alternatives for a timber sale cost accounting system, more will be learned as to the potential to answer these questions and change our current accounting system.”

The Forest Service pointed out that most current costs and current benefits are shown in the forest plan in which the land suitability decision is made. These costs and benefits are shown for 10-year periods, not annually, because the Forest Service does not think such annual detail would serve any purpose. However, in 1984, the Secretary of Agriculture did acknowledge the need for economic analysis and better management information on each sale to minimize costs and hold managers accountable. In this regard, Forest Service field personnel advised the subcommittee staff that management decisions are based primarily on attaining the yearly timber volume goals and that their success as managers is based on meeting these targets, not on any type of assessment involving a cost-to-benefit comparison.

The conference report (H.R. Rept. 98-1159) on Public Law 98-473, providing continuing appropriations for fiscal year 1985, directed the Forest Service to develop a timber cost accounting system. The report describes the tasks and the objectives of the system by stating:

“In developing the expanded timber cost accounting system, in line with concerns expressed in the House and Senate report, the Forest Service should develop proposals for a reasonable but complete system and should work with GAO in developing the system. At a minimum, the system should allow for identification of the costs of the timber sale program by component, and allow for a comparison of actual costs and benefits. The system should also allow for identifying other aspects of the timber program, such as firewood and nonconvertible products.”

The Forest Service responded by organizing a special Timber Sale Program Accounting Task Force in its Washington, D.C., office. The task force prepared an action plan, approved by the Chief of the Forest Service on January 3, 1985, that required investigation, design, testing, and evaluation activities and that required the task force to recommend an accounting system to be adopted for Service-wide implementation.

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## Objectives, Scope, and Methodology

As the subcommittee requested, our primary objectives were to evaluate whether the Service's system development activities were proceeding adequately and to determine whether the proposed system would be complete and allow for the comparison of actual costs and benefits. Because one of the main objectives of federal government accounting and financial reporting is assessing management performance and stewardship, we also wanted to assess the usefulness of the proposed system in managing the timber sale program

To meet these objectives, we compared federal system development guidance to the activities carried out by the Forest Service's task force to develop its system. In addition to the system proposal, we reviewed the task force's other written products. We also interviewed consultants to the task force, as well as Service headquarters and field personnel involved in task force investigation, testing, and analysis activities

Time and resource constraints prevented us from analyzing transactions in detail at a number of forests. To help in our analysis, however, we developed a detailed case study of a timber sale in the Estacada Ranger District of the Mt. Hood National Forest. We focused on this district and forest because Forest Service officials told us it represented one of the best information systems currently in place. The Mt. Hood National Forest had been included in early task force information gathering tests and is thought to be both a heavy timber-producer with numerous timber sales and a leader in information availability about those sales. It thus presented a good indication of whether existing information systems were being used to their full potential

Our review work began during August 1985 and continued through March 1986. We conducted our review in accordance with generally accepted government audit standards. In accordance with the subcommittee's request, we did not receive written comments on our work from the Forest Service

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## Mt. Hood National Forest

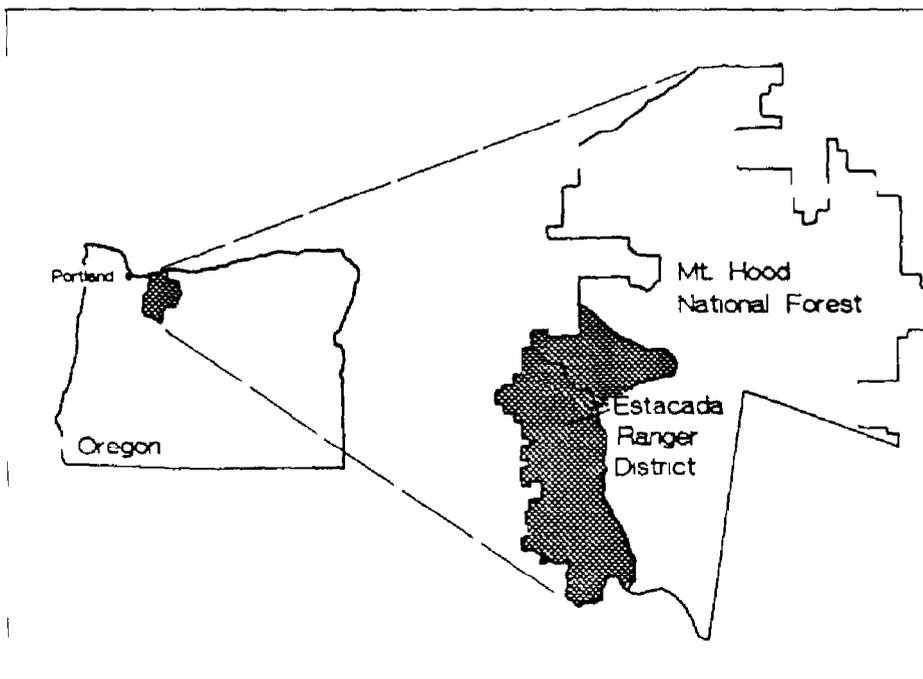
The Mt. Hood Forest covers slightly more than 1 million acres and is located in northern Oregon directly east of the city of Portland (See figure I.1.) With the Portland metropolitan area nearby, the forest is used heavily for recreation. It is divided into seven ranger districts and had approximately 625 full-time equivalent staff positions at the end of fiscal year 1985. In fiscal year 1985, it had 10,523 sales, including 50 over 2 million board feet, for a total volume harvested of 405.3 million board feet. Below-cost timber sales do not appear to us to be normal

**Appendix I  
Background and Objectives, Scope,  
and Methodology**

occurrences in the Mt. Hood National Forest. For example, figures generated during the test conducted for the Timber Sale Program Accounting Task Force indicated that there were six such sales in fiscal year 1984.

The Estacada Ranger District is one of the seven districts in the Mt. Hood National Forest. We included this one district in our review because the forest supervisor recommended it as a district experienced in the planning and budgeting process. The district is located on the west side of Mt. Hood and, due to its close proximity to Portland, is also heavily used for recreation purposes. The district encompasses about 198,000 acres and had 61 full-time equivalent positions in fiscal year 1985. The district is headed by the district ranger, under whom there are six main management groups: silviculture; timber management; sales administration; office administration; fire management; and a fish, wildlife, recreation, and law enforcement resource group. In fiscal year 1985 it sold about 92 million board feet in 978 separate sales, 13 of which were over 2 million board feet with a volume of 89.5 million board feet.

**Figure I.1: Mt. Hood National Forest**



# GAO Concerns on the Forest Service Proposal

The Timber Sale Program Information Reporting System which the Forest Service proposed will not be fully responsive to the directive in the conference report for a complete timber cost accounting system that will compare actual costs and benefits. It also will be of limited use in managing the timber sale program. Our primary concerns that arose in reviewing the Forest Service draft proposal are.

- The system may not account for all costs. The proposal does not clearly define the costs to be accounted for, excludes some costs entirely, and uses average costs instead of actual costs for some others.
- The existing accounting system, which the Service will rely on for cost data, distributes some costs on an estimated rather than actual basis and, therefore, may not provide accurate cost information.
- The proposed methods of accounting for such items as depreciation will not conform with government accounting principles and standards in all key respects, and reported costs may be distorted as a result.
- The level of accounting proposed may not provide sufficient detail for the Congress and the Service in managing the timber sales program.
- The methods for calculating benefits, a highly subjective area, have not been specified, and accurate forest use data on which to base the computations are not available in all cases. Furthermore, assigning dollar values to some benefits of an elusive nature, such as the value of an afternoon spent fishing, may lead to the erroneous perception that the values represent real dollar returns.

Each of these concerns is described in greater detail in the following sections.

## Proposed Reporting System

Rather than develop a cost accounting system, the Forest Service proposes what it refers to as a Timber Sale Program Information Reporting System. Basically, data from the Service's existing accounting system and other sources will be used to develop reports on timber sale costs and benefits. The draft proposal we received described the reports as follows:

1. Source and application of funds. This report will display the annual timber sale program cash flow based on data contained in the accounting system.

2. Financial investment characteristics. This report is designed to show what the prudent investor would pay for the area just harvested, after

all timber has been removed. It is thought to represent the value of the rights to future timber

3. Economic investment characteristics This report takes the information in the financial investment characteristics report and adds information on nontimber benefits and management cost savings that result from harvested acres. Nontimber benefits include items such as providing forage for cattle and recreation opportunities. Values are computed for the benefits, and the results are projected for a 50-year time span.

4. Progress report This report is to compare the outputs planned for the year, such as millions of board feet, as found in the forest's land management plan with the harvest and outputs claimed for the current year.

In developing its reporting system, the Service did not follow what we consider a normal approach to system development. Although there are no mandated criteria in this area, the Federal Information Processing Standards<sup>2</sup> provide guidance for federal agencies' use. These guidelines suggest an initial phase in which the system's objective is established and the types of inputs and reports to be produced to achieve that objective are defined. The Service, however, chose to first determine the types of information available and then develop its system around that information. Although the Service's approach was not necessarily incorrect from a technical standpoint, we believe the net result is a proposed system which will be of limited use in managing the timber sales program.

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### All Actual Costs May Not Be Accounted For

The conference report called for a system that would allow for identification of the costs of the timber sale program by component and allow for a comparison of actual costs and benefits. However, the Forest Service's system proposal does not clearly define the costs to be accounted for, excludes some costs, and indicates that actual costs might not be used in all cases.

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### Costs Not Defined

Costs associated with the timber sales program include those incurred directly in support of the program, such as salaries of district personnel engaged in planning and administering the sales. Although the task

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<sup>2</sup>The National Bureau of Standards publishes these guidelines, which are intended to be a basic reference and a checklist for general use throughout the federal government.

force has identified the direct cost component categories to be included, it has not defined the types of charges to be made to them. For example, with regard to the component category of timber sale planning, the task force has not stated if this category includes only labor or if it also includes costs for vehicles, materials, and the like. This is essential because if the type of information required in each cost category is not described, there is only a minimal basis for mutual understanding between the designers and users of the system. Therefore, the types of data one district includes may not be the same as those of another district. The result is that meaningful comparisons may not be possible, and all costs may not be accounted for.

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### Some Costs Excluded

We understand that the Forest Service intends to exclude certain costs from the timber sales program. For example, one notable cost to be excluded is the 25 percent of sales revenue paid to state governments. The Forest Service believes that since these are payments required by law, they should not be considered as costs. We agree with the Service that such payments are transfer payments in an economic sense; however, because of the direct link to timber revenues, we believe such payments are a cost of timber sales from an accounting perspective.

Another instance where we believe the Forest Service proposal will not yield complete results is the exclusion of landline location costs. The Service proposes that landline costs, which are the costs to determine the physical forest boundaries, be excluded from the cost of timber sales because they are considered to be a normal cost of forest management. We believe that if material landline costs are incurred because the Service needs to establish the timber boundary of a particular sale, such costs should be included as an expense of the sale.

Further, we understand that the Forest Service intends not to allocate portions of other costs to the program, such as overhead costs related to headquarters and regional management, and joint costs—those incurred for the benefit of several forest management objectives, such as reforestation costs. These types of costs will not be included in the proposed system because of the difficulty in developing allocation procedures. Although we agree that the allocation of some joint costs is arbitrary and may be misleading, we did not have sufficient time to assess the materiality of these costs and the significance their exclusion will have on the presentation of timber sale program information.

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## Use of Average Costs

The conference report called for the presentation of actual costs. However, the Forest Service proposal states that average rather than actual costs will be used in some cases. In discussing costs to be accounted for the proposal states that actual cost data will be adjusted for portions of the costs that (1) may take several years to complete prior to a sale, (2) may have "fluctuating costs and program levels," and (3) do not reflect costs for current-year sales. The proposal states that average annual costs will be determined for sale preparation and some other categories and will then be added to actual costs in other categories to arrive at total costs.

Presumably, the Forest Service rationale for presenting average rather than actual costs is to try to better match the revenues and expenses of a given year. The primary problem is that some of the Service's costs, such as sale preparation, are usually incurred in the years preceding the time the timber is removed and revenue is earned. Therefore, under the Service's proposal, only a portion of certain costs would be reported in the year incurred, with the remainder to be reported in future years. The proposal, however, does not explain exactly how the costs incurred but not reported in a given year will be tracked. Until this is done, we are unable to assess the reasonableness of the process. Our main concern is whether all costs will be properly accumulated and reported.

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## Cost Data Not Fully Accurate

The Forest Service plans to use data from its existing All Service Accounting (ASA) System for cost information that will become part of the new reporting system. Because of the way the ASA system is set up there is no precise way to test the accuracy, reliability, or validity of the labor cost data. Although time and resource constraints did not allow us to analyze the ASA system in depth, the work we were able to perform leads us to question the validity of the data in the ASA system.

Our concern stems from reviewing examples of how labor costs are distributed from ASA management codes to activities such as "Timber Sale Preparation" at both the Mt. Hood Forest Office and the Estacada Ranger District. We found examples of time being allocated to this category on an estimated basis, not an actual basis. The time that resource specialists actually spend assisting with timber sales may not reflect the time recorded. For example, a forest office nontimber resource person working on fish and wildlife habitat may charge time to an accounting management code entitled "Fish and Wildlife Habitat." When this person charges 8 hours to this code, the computer automatically distributes the charges to the different accounts contained within that one

accounting management code. In fiscal year 1985, there were 27 different combinations of accounts and percentages involved in distributions from this forest management code to such activity accounts as "Timber Sale Preparation." In this example, every time a forest office resource specialist charges 8 hours to the accounting management code for Fish and Wildlife Habitat, 18.95 percent of those 8 hours will be charged automatically to Timber Sale Preparation. In reality, that person may not have spent any time during that 8-hour period preparing timber sales.

We were told by managers in both the forest and district offices that the distribution percentages for accounting management codes are established yearly by the resource unit managers. At least three times during the year, financial reviews are to be conducted and percentages adjusted. Adjustment is also required if someone is working outside of the general and administrative area more than 20 percent of the time. Resource unit managers interviewed stated that adjustments are seldom, if ever, made to these percentages during the year. Since employees are not required to keep records on how they actually spend their time, it is difficult to test whether the costs determined by these percentages are accurate reflections of how time was spent.

Potential inaccuracies can also occur at the district level. Timber resource specialists at the Estacada District generally charge their time to one of three accounting management codes. The first is used for planning, the second for appraisal and related activities, and the third for salvage sales. Time spent on activities other than these three codes (i.e., special projects) will not be recorded separately unless a separate code exists for that activity. In other words, if a person worked 4 of 8 hours on a special project with no separate accounting management code, the planning code could be charged for 8 hours and timber planning costs would be overstated by the cost of 4 hours.

Time charges for resource positions at the district office, such as wildlife specialists and biologists, are similar to those for the forest office. If 8 hours are charged to the accounting management code called Fish and Wildlife, that time will be divided, according to predetermined percentages, among five different combinations of accounts. It is assumed by the Mt. Hood forest supervisor and Estacada District ranger that, over time, charges will fairly represent what was actually done. It is difficult, however, to test whether or not this assumption is correct since daily time records are not required to be kept.

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The department's inspector general (IG) and the Forest Service internal review teams have also reviewed portions of the existing ASA systems. The results of their reviews provide several other examples similar to our own. One IG review reported that costs, accumulated in the accounting system at all levels of the Forest Service (except for project personnel), represent basically unsupported estimates that may have no relationship to actual time devoted to each activity. A Forest Service review in the Pacific Northwest Region stated expenses are often recorded in the amounts budgeted rather than as incurred.

Based on our limited work, we are concerned that the ASA system cannot be precisely tested and that it accumulates costs in a manner that does not accurately reflect actual charges. If this continues to be the case, it cannot provide accurate cost data for the Timber Sale Program Information Reporting System and will be of little use in comparing actual costs and benefits. Unless actual costs can be reliably compared to budgeted costs, the basis by which to make decisions and judge management actions will be reduced.

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## Lack of Conformity to Accounting Principles and Standards

The Comptroller General is responsible for prescribing the accounting principles and standards which federal agencies are to observe. These requirements are contained in GAO's Policy and Procedures Manual for the Guidance of Federal Agencies (GAO manual). Based on our limited review of the Service proposal, we found instances in which the accounting procedures to be applied to the timber sales program may not conform to the Comptroller General's requirements. As a result, reported costs may be distorted.

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## Capitalizing and Depreciating Assets

For operations such as the timber sale program, the GAO manual requires the capitalization and depreciation of long-lived assets. This entails recording the cost of these assets in the accounting records and spreading that cost over the years the asset is in service. In the Forest Service, a primary asset of this nature are the roads that are constructed to allow timber to be cut and removed. Although the proposal indicates that roads will be depreciated over their useful lives, Forest Service officials have informed us that all roads will be depreciated over 50 years. However, we generally have suggested a depreciation period of no more than 40 years for federal agencies. The application of a longer period results in spreading the road costs over more periods and the reporting of lower costs from year to year. The application of a standard depreciation period, although not technically unacceptable,

does not recognize that some roads may have substantially shorter useful lives. As a result, reported depreciation charges may be materially misstated. Forest Service officials stated that a justification for using a 50-year period will be submitted to GAO.

The Service may also have difficulty complying with the requirement to capitalize. Although the proposal calls for aggregating costs at the forest level, the Service's accounting system does not contain records on road network costs at that level. Therefore, the Service will need to develop estimates of each forest's road investments and maintain the necessary accounting records. If it does not do so, reported costs under the proposed system will not be correct since the system will have no road costs to depreciate. Forest Service officials have assured us that they will be developing estimates of the existing road structure and will capitalize all new construction.

### ing Accrual Accounting

One other area of concern regarding the proposed system's conformance to applicable accounting requirements is whether an accrual or cash basis of accounting will be used. Accrual accounting, which agency heads are prescribed by law to follow (31 U.S.C. 3512(d)), provides for the recognition of costs when incurred and revenues when earned, as opposed to recording transactions only when cash changes hands. Although the Service proposal calls for "cash flow" presentations on timber sales, Service officials have assured us that the system will be operated on an accrual basis. This is important because, as the GAO manual states, accrual accounting can contribute materially to effective financial control over resources and costs of operations and is essential to develop adequate cost information.

### Reporting Costs and Benefits at the Forest Level Will Not Meet Objectives

The draft proposal's approach of reporting timber sale costs and benefits at the forest level will not provide sufficient detail to control and manage timber sales. When costs are aggregated at the forest level, the sales receipts of the forest as a whole may be sufficient to overcome the losses of individual below-cost sales. As a result, the Congress will have less information on the extent of below-cost sales, and effective control and management opportunities will be diminished.

Based on our experience at the Estacada District, the Forest Service does not plan timber sales or budget and account for their costs at the forest level. Timber sale planning and budgeting is done instead at levels within the forest, such as the district level. We think timber sales could

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be better monitored and controlled by aggregating costs and benefits at the management level each district uses. We believe that if the timber sale planning, budgeting, and accounting systems were all integrated at this same level, managers would have a common set of rules with which to make valid comparisons between planned and actual results.

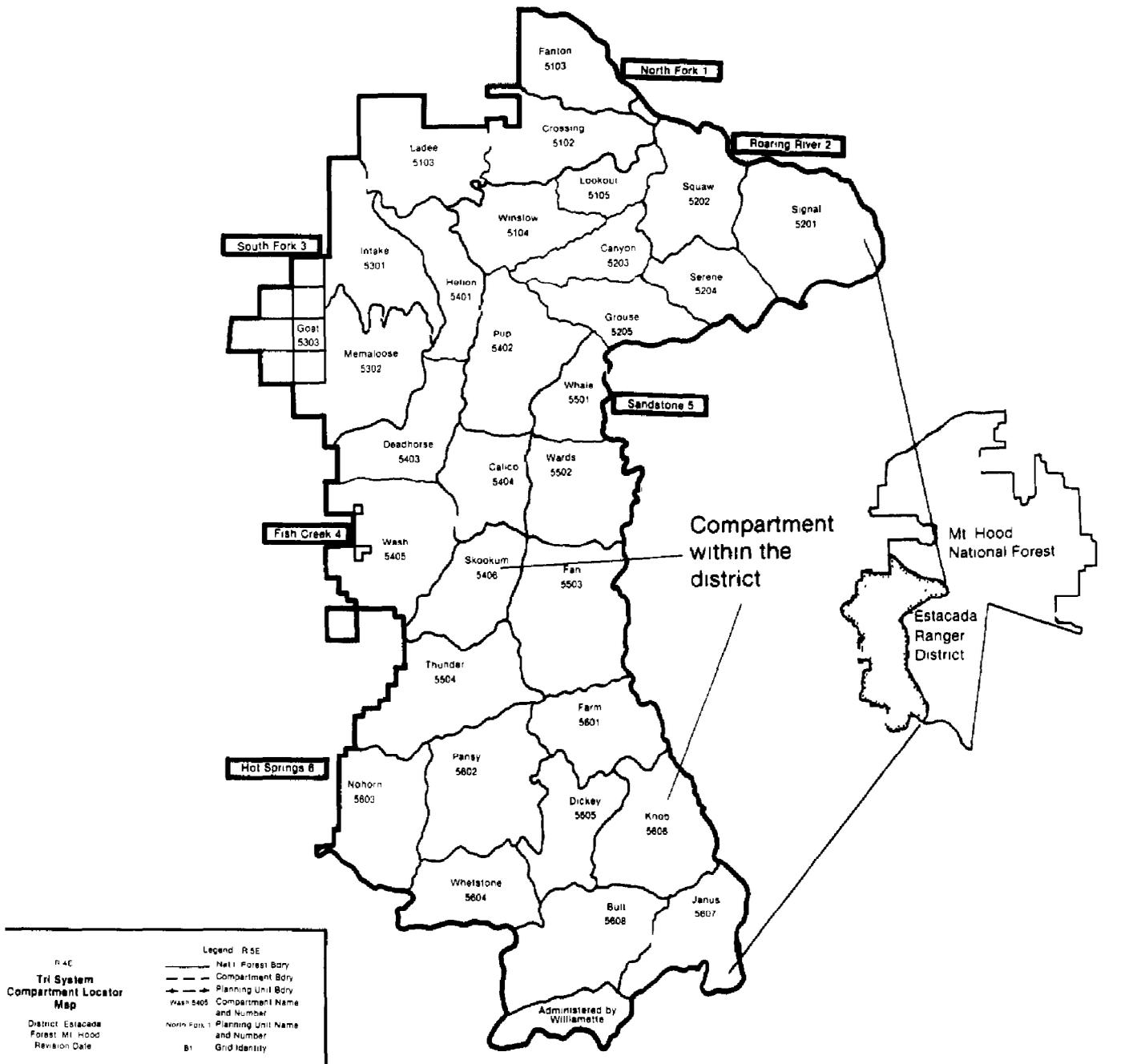
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**Current Systems Operation  
at the Estacada Ranger  
District**

An analysis of the timber sale planning, budgeting, and accounting systems at the Estacada Ranger District provides a basis for describing how an integrated set of systems could work. As figure II 1 shows, the district is divided into 31 "compartments." We were told that the compartments range in size from 5,000 to 9,000 acres. For each of the 31 compartments, the district keeps information on such items as land prescriptions, type and age of timber, types and numbers of wildlife, recreation sites, miles of streams, location of roads, and priority for cutting. According to the district's timber management officer, the district's system includes everything that is known about, or has been done on, each compartment for the past 20 years. The Estacada District determines which areas are feasible for individual timber sales by first conducting a "compartment analysis."

**Appendix II**  
**GAO Concerns on the Forest Service Proposal**

**Figure II.1: Estacada Ranger District Compartments**



Source U S Forest Service

After the district establishes the feasibility of locating preliminary sale in each compartment, it plans and prepares actual sales using a process patterned after the nationally established timber sale planning "Gate System." This system has 6 "gates," each one representing a management decision on whether to request additional funds to proceed with each timber sale

Two of these decision points offer opportunities to merge timber sale planning, budgeting, and ASA accounting information. Both relate to determining the full cost of preparing and conducting timber sales.

The first gate offers an opportunity to make use of the above information. This gate provides an early overview of a proposed sale and a preliminary assessment of the sale's timeliness, economic efficiency, and environmental soundness. When the district assesses economic efficiency, however, it emphasizes the timber harvesting costs and does not consider the Forest Service's costs of preparing the sale or the cost and benefits associated with nontimber resources, such as fish, wildlife, recreation, etc., affected by the sale. If compartment level information were considered more fully at this point, the district would be able to include amounts for the timber and nontimber resource costs and benefits. For example, costs associated with the adverse effects of the timber cut could be considered at this time. Including all such information would provide managers with an early opportunity to identify those compartments which appear to contain below-cost timber sales and help them to determine whether or not to proceed with sales in that area.

A second opportunity to make greater use of information is in the fourth gate. This gate's objective is to prepare the documents required for advertising a sale. This work includes a more detailed determination of the costs of such items as roads and logging. As with the preliminary estimate of costs, the final cost determination does not include Forest Service costs to prepare the sale or the costs and benefits associated with nontimber resources that are affected by the sale. This more detailed timber sale analysis could also include the compartment-related costs and benefits considered in the new system and permit managers one more opportunity to decide whether to advertise a given sale.

Based on our work at the Estacada District, timber sale planning and budgeting information can be merged more completely with the ASA accounting information. The district estimates timber sale costs for planning and budgeting by project. However, for ASA accounting purposes, timber sale costs for all projects are accumulated and totaled by activity.

(i.e., timber sale preparation, timber harvest administration) at the district level. For neither timber sale planning and budgeting nor subsequent accounting for costs are compartments used as cost centers for aggregating these figures.

In short, because the Estacada District uses compartments as the management unit to accumulate information for selecting timber sales, this same level appears to be the logical one to which budgeted and actual timber and nontimber resource costs and benefits should be totaled. We also believe that this is the appropriate level at which data for the proposed information system should be recorded. Once the information provided by a timber cost accounting system is integrated with the system used for timber sale planning and budgeting, areas of below-cost timber sales could be quickly identified and a supportable decision made on whether or not to continue with their preparation. Finally, the ability to compare actual with budgeted and planned cost and benefit figures would reveal areas where below-cost sales were not originally expected but later did occur and what conditions resulted in the change. This type of information would be valuable when considering whether or not to make future sales in the area.

**Forest Service Concerns  
about More Detailed  
Reporting**

In its draft report, the Forest Service addressed the cost of establishing and operating an information system at both the forest and the district levels. For a system at the forest level, the task force estimated the initial start-up costs for forest-level reporting at \$250,000, with annual costs of around \$300,000. For a system at the district level, the Forest Service estimated start-up costs at \$1.75 to \$2.5 million, with annual costs approaching \$2 million. It states the difference in costs is the result of the need for significant changes in data collection and system design and in the annual labor charges to produce the required reports.

We question the Forest Service's estimates. We know of no feasibility studies that have been conducted to establish the need for such additional costs. Also, we believe that the existing timber sale budgeting and accounting systems can be set up to accumulate cost and benefit data by compartment or by whatever management level each district uses to schedule its timber sales. Each compartment/management area could be assigned a unique accounting code to which costs (including actual labor charges and distributions for depreciation, nontimber resource costs, overhead, etc.) would be charged and accumulated annually. Timber revenues and other resource benefits would be recorded and aggregated in a similar fashion.

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We believe that the benefit of a cost accounting system is the information it can supply to control and manage timber sales. This information can best be provided at the management unit level the district uses to schedule its timber sales. If, as the Forest Service states, costs make this impractical, we believe other alternatives to the forest level, such as the district level, could also provide sufficient management information. If the system's information is insufficient to result in effective management and control, the costs incurred to design and operate the system will be wasted.

We believe that the concept of using the same management unit level to plan, budget, and account for timber sales establishes that the principles used for accounting for timber sale costs and benefits should be consistent with those used in planning timber sales and in developing the timber sale budget. By so doing, timber sale planning and budgeting, and ASA accounting are conducted under the same rules and can be fully integrated. Thereafter, reliable and comparable data can be summarized and reported to assist in managing current activities as well as developing estimates of future resource requirements. In our opinion, integrating the systems at the management unit level used by each district to inventory total resource information would be the level most appropriate for providing the Congress, executive branch officials, and Forest Service managers with the information they need to control and manage timber sales.

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## Lack of Information on Benefit Computations

The Service plans to report benefits other than revenue from timber sales. However, the Service proposal does not clearly specify what the benefits are or how these benefits will be computed. Also, the data needed to make the computations may not be readily available for all forests. In addition, assigning dollar values to some benefits of an elusive nature, such as the value of an afternoon spent fishing, may lead to the erroneous perception that such values represent real dollar return.

Although the Service proposal does not specify all benefit categories, it lists three broad areas of nonrevenue benefits to be reported: nontimber benefits, management savings, and social values. An example of one of the nontimber benefits is the amount of additional recreation opportunities provided by building logging roads and harvesting trees. In the past, the Service has developed such estimates and quantified them in dollars. This necessarily requires formulation of important assumptions regarding the additional recreation use resulting from the timber operation and the associated dollar value, and is inherently subjective. Give

these circumstances, we believe the Service must clearly state how the benefits will be computed so that (1) the different parties making the computations will do so on a consistent basis and (2) the users of the system's information can make informed judgments on its validity and limitations. The Service proposal makes reference to the sources to be used on benefit procedures, such as the national forest land management plans, but does not describe the specific assumptions, procedures, and values to be applied.

To be useful, the computation of many of the benefits should be based in part on how the forest is used. For example, the Service computes the recreation visitor days and wildlife/fish user days the forests provide. Our work at the Mt. Hood National Forest and the Estacada District disclosed that current data reported by the Service as benefits for those items are not accurate. When we asked for information applicable to the Estacada District, officials said they were reluctant to provide it because (1) the data on which the figures were based were outdated, (2) no recent surveys had been done upon which to base new amounts, and (3) the old figures were simply modified on the basis of population changes and the results used for forest plan purposes. Without current information on how the forests are used, it will be difficult to project future usage and develop sound benefit estimates.

We do not disagree with the Forest Service contention that harvesting timber may benefit other resource programs, such as recreation and wildlife management. Although determining whether such benefits exist is part of the Service's responsibility, it must be recognized that presentation of some benefits in dollar terms may be misleading and may convey the impression that they actually represent a financial return. For example, the value of recreation visitor days claimed may be presented even though no additional recreation occurs. In a case such as this, an alternative would be to simply present the benefits without assigning dollar values.



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