

January 1995

# TONGASS TIMBER REFORM ACT

## Implementation of the Act's Contract Modification Requirements







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

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**Resources, Community, and  
Economic Development Division**

B-253175

January 31, 1995

The Honorable George Miller  
Ranking Minority Member  
Committee on Resources  
House of Representatives

Dear Mr. Miller:

In response to your request, we are reporting on the Forest Service's implementation of certain unilateral modifications to long-term timber sale contracts in Alaska and other requirements of the Tongass Timber Reform Act. Our report contains a matter for congressional consideration and a recommendation to the Secretary of Agriculture designed to enhance the Forest Service's implementation of the act.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies to the appropriate congressional committees; the Acting Secretary of Agriculture; the Chief, Forest Service; and the Director, Office of Management and Budget. We will also make copies available to others upon request. Please call me at (202) 512-7756 if you or your staff have any questions. Major contributors to this report are listed in appendix II.

Sincerely yours,

A handwritten signature in cursive script that reads 'James Duffus III'. The signature is written in black ink and is positioned to the left of the typed name.

James Duffus III  
Director, Natural Resources  
Management Issues

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# Executive Summary

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## Purpose

In Alaska's Tongass National Forest, two companies—the Ketchikan Pulp Company and the Alaska Pulp Corporation—have held long-term (50-year) contracts to harvest timber. In response to congressional direction in the Tongass Timber Reform Act of 1990, the U.S. Forest Service made a number of changes to these contracts. These changes were designed to address perceived competitive advantages that the two companies had over timber harvesters with short-term (3- to 5-year) timber contracts. The act also added certain requirements aimed at mitigating the environmental damage stemming from timber harvests.

The Ranking Minority Member of the House Committee on Resources asked GAO to determine how the Forest Service had implemented certain contract modifications and related requirements of the Tongass Timber Reform Act. Specifically, GAO determined

- whether road credits that timber harvesters receive for building harvest-related roads are used consistently between long-term contracts and short-term contracts and
- whether buffers of standing timber have been left along designated streams as the act requires, and how the Forest Service monitors the buffers' effectiveness.

In addition, as agreed, GAO examined whether the Forest Service is following its policy of requiring full documentation of environmental effects whenever changes are made to the boundaries of timber harvest areas.

In September 1993, Alaska Pulp closed its pulp mill, charging that it was losing money because the price of timber was too high as a result of the long-term contract modifications. The Forest Service terminated Alaska Pulp's contract in April 1994 on the grounds that the mill's closure constituted a breach of contract. Consequently, this report focuses mainly on Ketchikan Pulp's contract, although the findings also relate to Alaska Pulp's contract.

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## Background

Road credits and stream buffers were two of several issues addressed in the Tongass Timber Reform Act. Within certain limits, timber harvesters can pay for timber by building harvest-related roads. The reform act called for modifying long-term contracts to create consistency between long-term and short-term contract holders in how these road credits are handled. Long-term contracts are divided into separate timber "offerings," each of

which lasts for several years; under the Forest Service's policy, long-term contractors could carry forward certain unused road credits (called "ineffective" credits) from one offering to the next. By contrast, if harvesters operating under short-term contracts could not use these "ineffective" road credits by the end of their 3- to 5-year contracts, the credits were canceled and could not be carried forward to another short-term contract. To protect fish and wildlife habitat, such as spawning ground for salmon, the reform act also directed the Forest Service to ensure that buffers of standing timber were left between designated streams and the timber harvest areas. These buffers were to be at least 100 feet wide.

Changes to timber harvest boundaries are sometimes needed after the environmental effects of the proposed harvest have been assessed. For example, upon closer review the area might be found to contain less harvestable timber than expected, requiring an expansion of the boundaries to meet projected harvest amounts; the Forest Service's policy requires that if such changes are made, the forest supervisor must determine and document whether the changes are environmentally significant enough to require additional environmental analysis.

GAO has reported on implementation of the reform act before. Four months after the act was passed, and in response to one of the act's requirements, GAO issued a report analyzing the Forest Service's actions.<sup>1</sup> GAO concluded that except for insufficient action on road credits, the changes complied with the act's requirements but that more time would be needed to determine how successfully the changes had been carried out.

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## Results in Brief

The Forest Service maintains that its existing policy provides consistent treatment of road credits in long-term and short-term contracts. GAO continues to disagree and believes that the policy continues to give Ketchikan Pulp a competitive advantage by allowing the company to apply "ineffective" road credits for a much longer period than timber harvesters who must use short-term contracts. Through the end of fiscal year 1993, Ketchikan Pulp had used road credits to pay for 73 percent of the timber harvested.

Checks of streamside buffers in the years immediately following the reform act showed that some buffers did not meet the 100-foot minimum.

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<sup>1</sup>Tongass National Forest: Contractual Modification Requirements of the Tongass Timber Reform Act (GAO/RCED-91-133, Mar. 28, 1991).

The Forest Service has since taken steps to ensure that this requirement will be met. In fiscal year 1994, the Forest Service also began a new program for assessing the effectiveness of such buffers. This program should help the Forest Service determine if the buffers are working as intended.

The Forest Service often is not following its policy of documenting the environmental effects of changes made to planned boundaries of timber harvests. In more than 90 percent of the cases GAO examined in which such changes had been made to Ketchikan Pulp's harvest areas, evidence that the changes' environmental effects had been assessed was incomplete or missing altogether. Not complying with the policy lessens the assurance that such changes are environmentally sound.

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## Principal Findings

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### Forest Service Has Not Changed Road Credit Policy

The Forest Service maintains that no change is needed in the Ketchikan Pulp's long-term contract in order to meet the reform act's provision that road credits be handled consistently between long-term and short-term contracts. It believes that the current policy meets this requirement, in that "ineffective" road credits are canceled at the end of all timber sale contracts, whether short-term or long-term. GAO continues to disagree; the current policy does not address the concern that led the Congress to require a change to provide consistent use of road credits for long- and short-term contracts. Ketchikan Pulp's continued ability to carry these credits forward from one timber offering to the next provides a competitive advantage over short-term contractors because the company has a much longer period to fully use such credits to pay for harvested timber. If the Forest Service's position is not satisfactory to the Congress, additional direction from the Congress would appear necessary.

### Compliance With Stream Buffer Requirements Has Improved

Spot-checks by the Forest Service and the state of Alaska during the first several years after the act was passed disclosed many instances where, at some point along their length, the buffers were less than the required 100 feet wide. The Forest Service has since taken steps to guard against future problems, and GAO believes these steps are sufficient.

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The Tongass National Forest’s management plan and an agreement between the Forest Service and Alaska for managing water quality both call for the Forest Service to monitor how effectively these buffers protect habitat. Before 1994, this monitoring program was limited and inconsistent, in part because specific guidance was lacking from the Forest Service’s Alaska Regional Office. Guidance was issued and a new monitoring program was developed in 1994. The new program contains additional elements that should strengthen the evaluation process.

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### Changes to Boundaries of Timber Harvest Units Not Adequately Documented

Contrary to the Forest Service’s policy, forest supervisors had not in all cases documented the environmental significance of changes to harvest unit boundaries or the need for additional environmental analysis—particularly for Ketchikan Pulp. This inadequate documentation occurred primarily because the forest supervisor inappropriately delegated his authority for documenting boundary changes to district rangers and did not require documentation if it was determined that the boundary changes were not significant. GAO examined 41 instances in which boundary changes had occurred in areas harvested by Ketchikan Pulp and found that in 39 instances the documentation was not adequate. In 17 instances, there was no documentation at all; in 22 instances, the documentation had not been reviewed according to the Forest Service’s policy. GAO also examined 19 instances in which boundary changes had occurred in areas harvested by Alaska Pulp and found that adequate documentation was present in 18 of them. The forest supervisor has since withdrawn the delegation of authority and has established a detailed process for assessing boundary changes. The process requires that the forest supervisor document the environmental significance of any changes to harvest unit boundaries and the need for any additional environmental analysis.

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### Recommendation to the Secretary of Agriculture

GAO recommends that the Secretary of Agriculture direct the Chief of the Forest Service to require Alaska Regional Office officials to periodically check to ensure that forest supervisors are properly documenting the environmental significance of boundary changes to timber harvest units made after environmental impact statements have been issued.

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### Matter for Congressional Consideration

In light of the Forest Service’s position that it needs to take no action to comply with the Tongass Timber Reform Act’s provision on road credits, the Congress may wish to consider directing the Secretary of Agriculture to modify the Ketchikan Pulp contract so that “ineffective” road credits

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generated during a timber offering would be canceled after the timber offering is completed.

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## Agency Comments

As requested, GAO did not obtain written agency comments on a draft of this report. However, the information on which the report's findings are based was discussed with officials responsible for timber management activities, including the Director, Timber Management Staff, at Forest Service headquarters and at the Alaska Region. Forest Service officials have continued to maintain that the agency's current policy on road credits complies with the act and that they intend to take no action. GAO believes that the act's language and legislative history make it clear that the Congress intended the Forest Service to make changes to remove the competitive advantage afforded the holders of long-term contracts in connection with the use of road credits. In other areas covered by the report, the officials indicated general agreement with the accuracy of the information.



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**Abbreviations**

APC	Alaska Pulp Corporation
EIS	environmental impact statement
GAO	General Accounting Office
KPC	Ketchikan Pulp Company

# Introduction

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The Tongass National Forest covers about 16.8 million acres in southeast Alaska and is the largest national forest in the United States, equal to an area about the size of West Virginia. The U.S. Department of Agriculture's Forest Service manages the Tongass for multiple uses, such as timber production, outdoor recreation, and fish and wildlife. The Forest Service's Alaska Region, headquartered in Juneau, Alaska, carries out the management responsibilities. Because of its magnitude, the Tongass is divided into three administrative areas—Chatham, Stikine, and Ketchikan—each having an area office headed by a forest supervisor. Each area office has between two and four ranger districts, headed by a district ranger, to carry out daily operations.

In the 1950s, the Forest Service awarded 50-year (long-term) contracts to the Ketchikan Pulp Company (KPC)—now a wholly owned subsidiary of the Louisiana Pacific Corporation—and the Alaska Pulp Corporation (APC)—a Japanese-owned firm—to harvest Tongass timber. As stipulated in their contracts, each company built a pulp mill to process the harvested timber—KPC near Ketchikan and APC in Sitka. In return, the Forest Service guaranteed a 50-year timber supply totaling about 13.3 billion board feet for both contracts. KPC's contract expires in 2004. APC's contract was to expire in 2011, but the Forest Service terminated it for breach of contract on April 14, 1994, because APC shut down its pulp mill in September 1993.

The Forest Service also sells Tongass timber to companies other than APC and KPC. These companies, referred to as independent short-term contractors, purchase timber under contracts usually lasting 3 to 5 years. Since 1980, about 30 percent of all Tongass timber sales have been made under independent short-term contracts. Although some of these short-term contracts have been awarded to APC and KPC, most have been awarded to other contractors.

Since the early 1980s, the Congress has expressed concern about the adverse impacts of the long-term contracts on competition for timber in southeast Alaska and on the Forest Service's ability to effectively manage the Tongass. Part of the concern centered on the perceived competitive advantages to APC and KPC that resulted from differences between certain provisions of the long-term and short-term independent contracts. Another part of the concern centered on the relationship of the long-term contracts to the overall management of the Tongass National Forest and, more specifically, to issues related to other forest resources such as fish and wildlife.

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The Tongass Timber Reform Act (P.L. 101-626), enacted on November 28, 1990, addressed these concerns. The act states,

“ . . . it is in the national interest to modify the contracts in order to assure that valuable public resources in the Tongass National Forest are protected and wisely managed. Modification of the long-term timber sale contracts will enhance the balanced use of resources on the forest and promote fair competition within the southeast Alaska timber industry.”

Among other things, the act directed the Secretary of Agriculture to unilaterally revise the long-term contracts in order to reflect nine specific modifications (see app. I for a complete list). A number of these modifications called for making long-term contracts consistent with short-term contracts in such respects as timber sale planning, environmental assessment, and the administration of road credits.<sup>1</sup> Other provisions of the act added new environmental requirements, such as leaving timber buffers at least 100 feet in width along designated streams.<sup>2</sup>

Four months after the act was passed, and pursuant to one of the act’s requirements, we issued a report to the Senate Committee on Energy and Natural Resources and the House Committee on Interior and Insular Affairs.<sup>3</sup> That report described the Forest Service’s revisions to the long-term contracts for each of the nine modifications and discussed whether the changes reflected the modifications specified in section 301(c) of the act. We concluded that, with the exception of dealing with the administration of road credits, the contract changes complied with the act’s requirements. We also concluded that more time would be needed to determine how these changes were actually carried out.

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## Objectives, Scope, and Methodology

You requested that we review the Forest Service’s implementation of certain contract modifications and other provisions of the Tongass Timber Reform Act. As agreed with your office, we focused this report mainly on two issues—road credits and timber buffers. More specifically, we determined

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<sup>1</sup>Road credits, referred to as “purchaser road credits” by the Forest Service, are earned by a timber purchaser for building roads that provide access to the timber to be harvested. Within guidelines set by the Forest Service, such credits can be used instead of cash to pay for harvested timber.

<sup>2</sup>Timber in the buffers provides a source of woody debris that enters streams over time to provide nutrients and enhance the aquatic habitat. Buffers also serve other purposes, such as enhancing water quality by limiting the runoff of silt entering streams from harvested areas.

<sup>3</sup>Tongass National Forest: Contractual Modification Requirements of the Tongass Timber Reform Act (GAO/RCED-91-133, Mar. 28, 1991).

- whether credits that timber harvesters receive for building harvest-related roads are used consistently between long-term and short-term timber sale contracts and
- whether buffers of standing timber have been left along designated streams as the act requires, and how the Forest Service monitors the buffers' effectiveness.

During our review, we also noted inconsistencies in the Forest Service's documentation of the environmental significance of changes to timber harvest unit<sup>4</sup> boundaries after environmental impact statements had been prepared. As agreed with your office, we included an analysis of this issue in this report.

To address the first objective, we analyzed the use of road credits by short-term contractors in fiscal years 1990-93 and compared this usage with road credits used by long-term contractors. Using Forest Service accounting data, we also determined the extent to which the long-term contractors had applied road credits against the cost of purchasing Tongass timber since the inception of the long-term contracts through the end of fiscal year 1993.

To address the second objective, we reviewed and analyzed the results of buffer monitoring conducted in 1992 and 1993 by the Forest Service and the Alaska Department of Fish and Game, reviewed the monitoring reports for 1991-93 from the Forest Service's Alaska Region and visited the Craig and Thorne Bay Ranger Districts within the Tongass National Forest to observe stream buffers. We also reviewed changes made in buffer-related policies and procedures by the Forest Service's Alaska Region in 1993-94.

To address the third objective, we reviewed and compared the planned harvest unit boundary maps included in the environmental impact statements with maps of the actual harvest boundaries.<sup>5</sup> On the basis of discussions with the Forest Service, the state of Alaska's Department of Environmental Conservation, and a private conservation group, we selected 19 APC timber harvest units and 41 KPC harvest units where the boundary changes may have been significant enough to require further environmental analyses. Our sample constituted about 33 percent of the

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<sup>4</sup>A timber harvest unit is an area within which the Forest Service specifies the harvest of all or part of the timber.

<sup>5</sup>For KPC, our analysis covered a single environmental impact statement that pertained to the entire 1989-94 operating period. For APC, our analysis covered multiple environmental impact statements for timber offerings in 1990-93.

APC units and 18 percent of the KPC units in which harvests had occurred outside the original boundaries. To determine the adequacy of documentation, we reviewed and analyzed harvest unit files. More specifically, we determined whether the files contained evidence that the forest supervisor had determined that the proposed boundary changes would not significantly change the effects discussed in the environmental impact statement or that the change was significant and would require a supplement to the environmental impact statement.

In conducting our work, we also obtained additional information and comments from the Forest Service, the state of Alaska, timber industry officials, and representatives of conservation groups. Within the Forest Service, we performed work at the headquarters in Washington, D.C.; the Alaska Regional Office in Juneau, Alaska; the Ketchikan Area Office in Ketchikan, Alaska; and the Thorne Bay Ranger District in Thorne Bay, Alaska and the Craig Ranger District in Craig Alaska. Our work with Forest Service officials was focused on the timber management and wildlife and fisheries staffs.

In September 1993, while our review was under way, APC closed its pulp mill, charging that it was losing money because the prices it paid for timber as a result of the long-term contract modifications were too high. The Forest Service responded that closure of the pulp mill constituted a breach of contract, and in April 1994 the Forest Service terminated APC's long-term contract. Although the APC contract is not active, we elected to retain certain data on APC in this report for illustrative purposes, and also because the courts have not yet ruled on the Forest Service's action in terminating the contract.

We conducted our review between September 1992 and October 1994 in accordance with generally accepted government auditing standards. As requested, we did not obtain official agency comments on a draft of this report. However, the information in this report was discussed with timber management officials, including the Director, Timber Management Staff, at Forest Service headquarters, the Director's counterpart in the Alaska Region, and officials in the Department of Agriculture's Office of General Counsel. As chapter 2 will discuss, these officials disagreed with our conclusions about purchaser road credits. In other respects, however, they agreed that the information presented was accurate. We have incorporated their suggested changes where appropriate.

# Purchaser Road Credit Requirement of the Act Not Implemented

Purchasers of timber in the Tongass National Forest often pay for part of the timber they purchase with credits they have received for building harvest-related roads. The Tongass Timber Reform Act required modifications to KPC's and APC's long-term contracts to ensure that credits KPC and APC received for building such roads would be provided in a manner consistent with procedures used in providing road credits to short-term contractors. This provision was aimed at eliminating KPC's and APC's competitive advantage of being able to maintain certain road credits for much longer periods of time than short-term contractors.

As we pointed out in our March 1991 report, the Forest Service did not modify the APC and KPC contracts to address this provision of the act. Forest Service officials continue to believe this contract modification is not required. They maintain that consistency already exists because road credits are canceled at the end of all timber sale contracts, whether long-term or short-term. However, this approach leaves the long-term contractors' competitive advantage intact and is not consistent with congressional direction that the contracts be modified.

## Road Credits May Be Used to Pay for Harvested Timber

Harvesting timber often requires that the company harvesting the timber build roads to move logging equipment in and out of the harvest area and transport harvested logs. As compensation to the timber purchaser, the Forest Service gives road credits<sup>6</sup> equal to the estimated cost of building the roads. Timber purchasers can use these credits instead of cash to pay for timber.

Certain limitations apply to road credits used to pay for harvested timber. When the Forest Service prepares a timber sale, it establishes a base value<sup>7</sup> for the timber. This base value must be paid in cash. For example, if a timber sale has a base value of \$400,000 and is sold under competitive bid for \$900,000, the purchaser must pay the base value (\$400,000) in cash. The remaining \$500,000 can be paid in whole or in part with road credits.

Because timber purchasers cannot use road credits to pay the entire cost of the timber, situations may arise in which they cannot use all the road credits they have earned. To continue the example above, if the purchaser earned road credits worth \$700,000, the purchaser could apply only \$500,000 in credits against the cost of the timber, because the difference

<sup>6</sup>The official name for these credits is "purchaser road credits."

<sup>7</sup>The base value represents the minimum amount for which the Forest Service will sell the timber. It is generally expressed as a "base rate" per thousand board feet of timber.



between the purchase price and the base value is only \$500,000. Those road credits that can be applied against the cost of timber are called “effective”; those road credits left over are called “ineffective.” In this example, the timber purchaser has \$500,000 of effective credits and \$200,000 of ineffective credits.

Under Forest Service contracts, a timber purchaser retains ineffective road credits until the expiration of the timber sale contract in which the credits are earned. Although such credits may appear valueless, for long-term contractors they can become effective—and therefore acquire value—if the timber’s purchase price is adjusted upwards to reflect higher current market values for timber.<sup>8</sup> Again using the earlier example, a subsequent adjustment in the purchase price from the original \$900,000 to \$1 million would also mean that \$100,000 of ineffective road credits would be made effective. This additional amount could be used to offset the increased purchase price.

APC and KPC have made extensive use of road credits as a means of paying for timber. Each used road credits to pay for about three-fourths of the value of timber harvested under its long-term contract. Through the end of fiscal year 1993, the value of timber sold to the two companies since the inception of the long-term contracts has been about \$268 million (in constant 1993 dollars). The two companies used road credits to pay for 75 percent, or \$201 million, of the total price of timber. KPC used road credits to pay for 73 percent of its timber; APC used road credits to pay for 79 percent. (See table 2.1.)

**Table 2.1: Type of Payment Used for Harvested Timber on KPC’s and APC’s Long-Term Contracts Through Fiscal Year 1993**

Dollars in millions (constant 1993 dollars)			
Purchaser	Road credits	Cash	Total
KPC	\$131	\$48	\$179
APC	\$70	\$19	\$89
Both contracts	\$201	\$67	\$268

## Contracts Not Modified to Comply With Road Credit Requirement

The Forest Service did not revise the provision on the use of road credits in its long-term contracts to make them similar to the provision in its short-term contracts, as required by the reform act. Because this modification was not made, APC and KPC have been able to use ineffective road credits from timber offering to timber offering throughout the

<sup>8</sup>Under the provisions of the long-term contracts, the Forest Service can initiate a redetermination of the price paid by long-term contractors if the market value of the timber rises substantially.

remaining life of their long-term contracts. By contrast, ineffective road credits for short-term contracts are canceled at the end of the contracts. We pointed out this inconsistency in our March 1991 report and recommended that action be taken. The Forest Service, however, has not acted on our recommendation. The Forest Service maintained—and continues to do so—that for ineffective road credits, no modification was needed to make the treatment of road credits consistent between long-term and short-term contracts. The Forest Service believes that the treatment is consistent, in that ineffective road credits are terminated at the end of either type of contract. It maintains that the amount of time the long-term contractors could hold the credits is not relevant.

Our concern about the Forest Service's argument is that although ineffective credits are canceled at the end of both types of contracts, long-term contractors continue to hold a competitive advantage. Short-term contractors can use ineffective road credits only during the length of their contracts, which are considerably shorter than the 50-year long-term contracts—short-term contracts usually last 3 to 5 years. The long-term contractors are able to keep these credits available for possible use over a longer period by transferring them from timber offering to timber offering. Their competitive advantage is that they have greater ability to retain and use ineffective credits to offset timber payments if the price of timber rises during the life of their contracts. In our view, the language of the Tongass Timber Reform Act, as well as its legislative history, makes it clear that the Congress intended the Forest Service to make changes in road credits so that they would be treated substantially the same under both long- and short-term contracts.

Comparisons between the two types of contracts show that this competitive advantage can be substantial. For example, as of March 1993, APC and KPC held \$5.4 million in ineffective road credits; four short-term contractors held \$3 million in ineffective road credits. The contracts held by the short-term contractors are scheduled to expire in 1995 and 1996, at which time any remaining ineffective credits will be canceled. By contrast, KPC retains the ability to convert or transfer its ineffective credits between offerings until the year 2004. APC would have been able to carry forward its ineffective credits to 2011 had its contract not been terminated.

The following are more specific illustrations of how KPC has been able to use ineffective road credits in ways that short-term timber contract holders cannot:

- In March 1992, KPC transferred \$7,510,248 in road credits it had received from five previous timber offerings back to the long-term contract's main account for use in subsequent offerings. Of this amount, only \$26,086 was effective road credits. Had the credits been treated consistently with those of short-term contracts, KPC would not have been able to transfer the \$7,484,162 in ineffective credits.
- In January 1993, KPC paid cash in the amount of \$407,747 instead of using road credits for timber that it had harvested. Had this been a short-term contract, the financial transaction would have been closed and the credits could not have been used. However, because it was under a long-term contract, KPC was able to transfer ineffective road credits from other offerings to this one, replace the cash with ineffective credits, and thus receive a refund of the cash it paid above the base rate.

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## Conclusions

In our March 1991 report, we noted that the Forest Service did not modify the long-term timber sales contracts to comply with the requirements of the reform act that road credits be treated substantially the same under both long- and short-term contracts. We pointed out that the language of the Tongass Timber Reform Act, as well as its legislative history, makes it clear that the Congress intended the Forest Service to make changes in road credits so that they would be treated substantially the same under both long- and short-term contracts. In that report, we recommended that the Forest Service revise the contracts accordingly. We continue to believe that ineffective road credits resulting from each timber offering should be canceled under KPC's long-term contract after each timber offering is completed. Unless the Forest Service revises KPC's long-term contract to bring this change about, KPC will continue to have a competitive advantage over short-term timber contract holders.

Our conclusions would also be applicable to APC if the Forest Service had not terminated APC's long-term contract or if for some reason APC's contract is reinstated in the future.

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## Agency Comments

In its response to our earlier report and in its discussions on a draft of this report, the Forest Service has continued to maintain that its current policy complies with the act and intends to take no action to modify the provision for road credits in long-term contracts. The Forest Service maintains that the treatment of road credits is consistent, in that ineffective road credits are terminated at the end of either type of

contract. They maintain that the length of time that the long-term contractors can hold the road credits is not relevant.

Our concern about the Forest Service's argument is that although ineffective credits are canceled at the end of both types of contracts, long-term contractors continue to hold a competitive advantage. Their competitive advantage is that they have greater ability to retain and use ineffective credits to offset timber payments if the price of timber rises during the life of their contracts. In our view, the language of the Tongass Timber Reform Act, as well as its legislative history, makes it clear that the Congress intended the Forest Service to make changes in road credits so that they would be treated substantially the same under both long-and short-term contracts.

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**Matter for  
Congressional  
Consideration**

In light of the Forest Service's position that it needs to take no action to comply with the Tongass Timber Reform Act's provision on road credits, the Congress may wish to consider directing the Secretary of Agriculture to modify the Ketchikan Pulp contract so that ineffective road credits generated during a timber offering would be canceled after the timber offering is completed.

# Compliance With Stream Buffer Requirements Has Improved

The Tongass Timber Reform Act directs the Forest Service to protect fish and wildlife habitat in streamside, or “riparian,” areas of harvest units by designating 100-foot buffers of timber to be left standing along the sides of many streams in timber harvest areas. During inspections of these buffers in 1992 and 1993, however, both the Forest Service and the state of Alaska found buffers that, at some point along their length, did not meet the minimum 100-foot width requirement. The Forest Service has since taken sufficient steps to ensure greater compliance with this requirement.

The Forest Service’s management plan for the Tongass National Forest, as well as its agreement with the state of Alaska for managing water quality, calls for monitoring the effectiveness of buffers. We found that before 1994, the Forest Service’s monitoring efforts had been limited in scope and often did not include measurements against important criteria that could help determine how effectively buffers were working. This situation was partly the result of the lack of specific monitoring guidance from the Alaska Regional Office. In fiscal year 1994, the Forest Service implemented a new program to monitor buffers’ effectiveness that, among other things, provides clearer direction for the types of information to be gathered.

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## Reform Act Requires 100-Foot Buffers Along Certain Streams

The reform act requires that timber harvesters leave 100-foot buffers of standing timber along two classes of streams in the Tongass National Forest—class I streams and class II streams that flow directly into class I streams:

- Class I streams are perennial or intermittent streams that (1) are direct sources of domestic-use water; (2) provide spawning, rearing, or migration habitat for migratory and resident fish; or (3) have a major effect on the water quality of another class I stream.
- Class II streams that flow directly into a class I stream are perennial or intermittent streams that (1) provide spawning and rearing habitat for resident fish or (2) have moderate influence on the water quality of other class I or class II streams.

Such buffers are designed to protect riparian areas, which are important in such ways as providing fish and wildlife habitat, protecting stream channels and stream banks, and stabilizing floodplains. Whenever the stream lies within the harvest area, the act requires a 100-foot buffer on each side. Whenever the stream forms a boundary of the harvest area, the buffer must be at least 100 feet wide on the side where timber is to be harvested. The act required buffers for those timber harvest units from

which timber was either sold or released for harvest on or after March 1, 1990.

The Forest Service took two main steps to implement this provision of the act. First, it modified APC's and KPC's long-term contracts to require that buffers of at least 100 feet<sup>1</sup> be established along class I and class II streams. Second, the Forest Service modified its regional Soil and Water Conservation Handbook in February 1991 to incorporate changes resulting from the act. The handbook now identifies the management practices needed to maintain and protect water quality and fisheries habitat and to minimize adverse effects on riparian areas from logging and other land-disturbing management activities. The handbook's changes reinforce the importance of the buffers by calling for special attention to land and vegetation for 100 feet from the edges of all streams, lakes, and other bodies of water.

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## **Some Buffer Widths Less Than Required by the Act, but the Forest Service Has Taken Steps to Improve Compliance**

Under an agreement with the Alaska Department of Environmental Conservation, the Forest Service is to monitor how well the buffers have been implemented. Among other things, the Forest Service is to determine whether established buffers comply with applicable standards and guidelines, including checking whether the buffers are at least 100 feet wide. In addition to the Forest Service's monitoring, the Alaska Departments of Fish and Game and Environmental Conservation monitor buffer widths.

On-site monitoring inspections during 1992 and 1993 by the Forest Service and the Department of Fish and Game of portions of KPC's and APC's buffers showed instances in which the 100-foot minimum requirement was not met. More specifically:

- In September 1992, the Department of Fish and Game reported that during an inspection of harvest units on northern Prince of Wales Island, at least 16 of the 20 buffer measurements taken did not meet the 100-foot requirement. The narrowest portions of the buffers measured were about 50 feet wide, and portions of 11 buffers were less than 75 feet wide.
- In October 1992, Thorne Bay Ranger District staff made 132 buffer measurements and found that portions of 38 buffers—almost

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<sup>1</sup>Subsequent review has indicated that wider buffers, at least in some locations, may be needed. A joint study issued in May 1993 by the Forest Service and the Bureau of Land Management examined stream buffers in Alaska, Washington, Oregon, Idaho, and California and concluded that buffers with a minimum width of 300 feet may be needed to protect fish-bearing streams and lakes.

29 percent—were less than 100 feet wide; most were narrower by 10 to 20 feet.

- In July 1993, an interdisciplinary team from the Sitka Ranger District reviewed more than 120 timber harvest units and found that portions of the buffers in more than 100 of the units were less than 100 feet wide. However, these buffers were usually only narrower by a few feet.

The inspectors noted that such factors as uneven terrain, dense vegetation, and meandering, multichannel stream courses can lead to errors in designating buffers and adhering to minimum widths across the many miles of riparian areas affected by timber harvests. Changes have been made to address the problems identified in the inspections of buffer widths by the Forest Service and the Alaska Department of Fish and Game. Each of the three area offices of the Tongass National Forest—Ketchikan, Stikine, and Chatham—recognized the need to take corrective action to attain a higher degree of conformity with the requirement and have taken actions to ensure greater compliance.

The Ketchikan area office, where the greatest concentration of buffers exists, provides an example. In March 1993, in response to a December 1992 directive from the area office, the area's three district rangers reported that corrective actions had either been taken or would be taken in the near future. For example, the rangers said that

- a certification statement on buffer widths had been added to the planning documents for all harvest units,
- cloth tapes and laser guns were being used to provide precise measurements of buffer widths, and
- district personnel received training on buffer measurements and other aspects of harvest unit layout. Similar steps have been taken or are under way in the Stikine and Chatham areas. We believe the steps taken at the area and district levels will help ensure that buffers with the appropriate widths are established.

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## Monitoring of Buffers' Effectiveness Has Been Limited, but Improvements Have Been Made

The Tongass Land Management Plan and the Forest Service's agreement with the Alaska Department of Environmental Conservation specify that the Forest Service is to monitor the effectiveness of its projects, activities, and practices. As part of its monitoring effort, the Forest Service is to determine if buffers have been effective in minimizing the adverse effects that logging and other land-disturbing activities could have on riparian areas.

We found that before 1994, the Forest Service did not have a regional program to monitor the buffers' effectiveness. Each of the area offices had its own monitoring procedures. However, these procedures to monitor buffer effectiveness were limited in scope and often did not include measurements against important criteria (such as water quality<sup>2</sup>) needed to determine how effectively buffers were working. For example, within the Stikine area, monitoring of the buffers' effectiveness consisted of visual observations of the extent to which the buffers contained timber that had been blown down by wind. While these observations yielded insights into the relative lack of effectiveness of buffers with blown-down timber,<sup>3</sup> the focus on this single characteristic left many questions about effectiveness unaddressed. Similarly, the Ketchikan area limited its monitoring efforts to steep, deeply cut drainages. Again, the efforts yielded useful information, but the effectiveness of buffers that did not fall into this one limited category went largely unaddressed.

According to Stikine area officials, the lack of sufficient funds, staff, and monitoring objectives were the primary reasons why monitoring buffers' effectiveness has been limited. In addition, Ketchikan area officials told us that more specific direction was needed from the Alaska Regional Office identifying the kinds of information needed to monitor buffers' effectiveness.

Alaska Regional Office officials said that they initiated a monitoring project in 1992 that would lead to establishing a regionwide program to monitor buffers' effectiveness. The project reviewed the condition of buffers, evaluated their effectiveness at maintaining riparian habitat and water quality, and recommended improvements to buffers' design. The project identified six types of information for use in assessing buffers' effectiveness, including measuring the volume of large woody debris in a stream and determining the stability of stream banks.

According to the regional office monitoring coordinator, the project was tested at eight sites in the Chatham area in 1993. For example, in June 1993 the Forest Service and the Alaska Department of Environmental

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<sup>2</sup>One goal of buffers is to lower the amount of silt running into the stream as the result of a timber harvest. Excessive silt can make it difficult for fish to draw oxygen from the water and can also cover gravel beds used by salmon as spawning grounds.

<sup>3</sup>The area office concluded that buffers with blown-down timber are not fully effective. Blown-down trees exposed more of the stream to the sun, raising water temperatures above levels that were suitable for fish. They also cause stream banks to erode and increased the amount of large woody debris in the stream. A certain amount of woody debris is important as a source of nutrients and enhanced habitat, but too much of it has adverse consequences.



Conservation jointly monitored the effectiveness of two buffers along a class II stream. The environmental specialist with the Alaska Department of Environmental Conservation told us preliminary indications showed that the two buffers were meeting expectations in being able to protect riparian areas. The regional office monitoring coordinator also told us that the 1994 buffer monitoring plans for each of the area offices included the types of information identified as contributing to the evaluation of buffers' effectiveness in the eight-site project. Currently, each of the three areas is also participating in a multiyear, forestwide study of the stability and effectiveness of stream buffers. According to the regional monitoring coordinator, the interim results of the study will be available in the spring of 1995.

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## Conclusions

The Forest Service has taken steps to improve both monitoring the width of buffers and evaluating their effectiveness. These steps should help ensure that buffers more consistently meet minimum width requirements and that their overall effectiveness is assessed more systematically. Because the buffer requirement is relatively new and because the effectiveness of buffers has been studied only to a limited degree, more time will be needed to determine how well they are working to help protect fish and wildlife habitat in timber harvest areas.

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# Changes to Boundaries of Timber Harvest Units Not Adequately Documented

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If the boundary of a timber harvest unit is changed after the environmental impact statement (EIS) for the area has already been prepared, the Forest Service's policy requires that forest supervisors determine and document whether the changes are environmentally significant enough to require additional environmental study.

Forest supervisors were not, in all cases, documenting the environmental significance of the harvest units' boundary changes or the need for additional analysis beyond what had been described in the existing EIS. This was particularly the case for KPC's harvest units. We examined 41 instances in which boundary changes had occurred in areas harvested by KPC and found that in 39 instances the documentation was not adequate. In 17 instances, there was no documentation at all, and in 22 instances the documentation had not been reviewed according to the Forest Service's policy. We also examined 19 instances in which boundary changes had occurred in areas harvested by APC and found that adequate documentation was present in 18 of them. As a result, the Forest Service had no assurance that the environmental consequences of the boundary changes were analyzed. During our review, in October 1993 the current forest supervisor responsible for KPC's harvest units sent instructions to district rangers detailing a process for assessing boundary changes and specifically stated that he would document the environmental significance of any changes and the need for any additional environmental analysis.

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## Forest Service's Policy Requires Documentation of Boundary Changes to Timber Harvest Units

Under the Forest Service's policy and in compliance with the National Environmental Policy Act, the Forest Service is required to assess the environmental impacts of proposed timber harvests and prepare an EIS. Among other things, an EIS documents the location and design of the planned timber harvest units within the area covered by the timber offering and identifies the volume of timber to be cut.

For a number of reasons, the boundaries of timber harvest units analyzed in the EIS may subsequently be revised. At the time the EIS is developed, precise information about the volume of economically harvestable timber, unique habitat for endangered species, or other specific characteristics of the land may not be known with complete accuracy. For example, more detailed on-site review could show that the planned boundaries contain less harvestable timber than originally projected or that additional eagle nesting areas or streams requiring buffer protection might be found. To deal with such circumstances and still provide the needed volume of harvestable timber, boundary adjustments may be needed. However, by

this time the EIS may have been developed, made available for comment, and approved.

The Forest Service's policy contains several requirements for assessing and documenting the environmental effects of boundary changes made after environmental review has already been completed. The EIS specifies that for any proposed action (such as a boundary change) that deviates from a planned activity, the forest supervisor is to document the environmental significance of the proposed action. In doing so, if the forest supervisor determines that the impacts of the change do not deviate significantly from the impacts discussed in the EIS, the timber sale can proceed without further environmental study. However, if the forest supervisor determines that the change is significant, a supplemental EIS must be prepared.

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## Impacts of Changes to Boundaries of Harvest Units Not Documented

Contrary to the Forest Service's policy, forest supervisors had not in all cases documented the environmental significance of changes to harvest unit boundaries or the need for additional environmental analysis—particularly for KPC's harvest units. This situation occurred primarily because the forest supervisor inappropriately delegated his authority to district rangers to determine if boundary changes were significant and did not require the district rangers to provide documentation if they determined that the change was not significant. The Forest Service's policy does not allow this authority to be delegated to district rangers and in all cases requires documentation of the environmental significance. We reviewed the files for 60 harvest units—19 for APC and 41 for KPC—that had boundary changes after the EIS had been prepared. These units represented about 33 percent of APC's units and 18 percent of KPC's units in which harvests had occurred outside the original boundaries. Adequate documentation was present in 18 of the 19 files for APC's units but in only 2 of the 41 files for KPC's units. More specifically, for KPC's units,

- 16 units had no documentation at all of the environmental significance of the boundary changes,
- 1 unit had adequate documentation of the environmental significance of one boundary change but no documentation for a second boundary change, and
- 22 units had documentation prepared by someone other than the forest supervisor—such as a district ranger—with no indication that the forest

supervisor had reviewed the results. Guidance from the region places the responsibility for such determinations with the forest supervisor.

Documentation of environmental impacts is important because it clearly demonstrates that the impacts were considered. However, the lack of documentation goes beyond simply being out of compliance with the Forest Service's policy. When no documentation was present in the file, the Forest Service had no assurance that the environmental significance of the boundary changes had actually been analyzed.

While the absence of a forest supervisor's review of documentation may seem of less concern than the absence of documentation altogether, the absence of review has been a concern that the Forest Service has tried to correct for some time. In a November 1990 review, personnel in the Alaska Region noted that the forest supervisor responsible for KPC's harvest units at that time had inappropriately delegated to others the authority to make determinations about the environmental significance of boundary changes. Contrary to the Forest Service's policy, the delegation of authority did not require documentation if it was determined that the boundary change was not significant. The Alaska Region personnel recommended that the delegation of authority be withdrawn. When those personnel followed up in February 1992, they noted that the practice had apparently stopped since the forest supervisor had verbally withdrawn his delegation of authority. However, 9 of the 22 instances we examined in which the forest supervisor's review was lacking occurred after February 1992. We discussed our findings with the current forest supervisor and he agreed that there was a need for better documentation of boundary changes and their significance. In October 1993, the forest supervisor sent a letter to district rangers setting forth a detailed five-step process for assessing boundary changes and specifically stating that the forest supervisor will determine the significance of any changes and the action necessary.

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## Conclusions

The Forest Service needs to ensure that the problems of missing or inadequate documentation of the environmental significance of boundary changes to timber harvest units are addressed. In recent years, although the problem has been noted, progress in correcting it has been slow. Improved compliance is important in providing assurance that environmental concerns associated with timber harvesting activities under long-term contracts have been fully addressed. Accordingly, we believe the Alaska Regional Office needs to continue its oversight of forest

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supervisors' compliance with the documentation requirements for changes to harvest unit boundaries that are made after the EIS have been issued.

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## Recommendation

To ensure full consideration and disclosure of the environmental impacts of boundary changes to harvest units, we recommend that the Secretary of Agriculture direct the Chief of the Forest Service to require Alaska Regional Office officials to periodically check to ensure that forest supervisors are properly documenting the environmental significance of boundary changes to timber harvest units made after EIS's have been issued in the Tongass National Forest.

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## Agency Comments

We discussed the facts and our conclusions with the Forest Service officials responsible for timber management activities at headquarters and the Alaska Regional Office. These officials generally agreed with our facts and conclusions concerning documenting changes to timber harvest units and provided some technical clarifications that we incorporated, as appropriate.

# Modifications to the Long-Term Contracts Required by the Tongass Timber Reform Act

The Tongass Timber Reform Act (P.L. 101-626), dated November 28, 1990, directed the Secretary of Agriculture to make the following revisions to the two long-term contracts to reflect the modifications required by section 301(c) of the act.

<b>Modification</b>	<b>Section of Act</b>
Assure that all timber sale planning, management requirements, and environmental assessment procedures regarding the long-term contracts are consistent with procedures for independent timber sales.	301(c)(1)
Eliminate the practice of long-term contract holders harvesting a disproportionate amount of old-growth timber.	301(c)(2)
Assure that long-term contract holders substantially harvest timber offered for harvest within 3 years before the Secretary offers additional timber to the companies.	301(c)(3)
Assure that the Forest Service determines the precise stands of timber to be harvested and when harvests will occur.	301(c)(4)
Allow the long-term contract holders to reject timber offered, which, if rejected and subsequently sold within 12 months, will be deducted from the amount of timber required to be made available under the contract.	301(c)(5)
Assure that the long-term contract holders count utility logs against the total volume of timber required to be made available to harvest under the contracts.	301(c)(6)
Assure that the long-term contracts are provided with purchaser road credits in a manner consistent with independent national forest timber sales.	301(c)(7)
Assure that the price of timber sold to long-term contract holders will be adjusted to be comparable with the price of timber sold in competitive independent timber sales.	301(c)(8)
Assure that timber offered under the long-term contracts meets the economic criteria consistent with the timber offered in independent timber sales.	301(c)(9)

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# Related GAO Products

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Tongass National Forest: Contractual Modification Requirements of the Tongass Timber Reform Act (GAO/RCED-91-133, Mar. 28, 1991).

Tongass National Forest: Administration of Two Long-Term Alaskan Timber Contracts (GAO/RCED-90-87, Feb. 21, 1990).

Tongass National Forest: Timber Provision of the Alaska Lands Act Needs Clarification (GAO/T-RCED-88-44, May 26, 1988).

Tongass National Forest: Timber Provision of the Alaska Lands Act Needs Clarification (GAO/RCED-88-54, Apr. 11, 1988).

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