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December 1998

# FEDERAL LAND MANAGEMENT

## Appraisals of Headwaters Forest Properties



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

B-281704

December 24, 1998

Congressional Committees

In Public Law 105-83, passed on November 14, 1997, the Congress authorized and appropriated up to \$250 million to preserve and protect the Headwaters Forest in Humboldt County, California, by acquiring the approximately 4,500-acre Headwaters Forest and about 3,000 acres of adjoining timberland. The 7,500 acres to be acquired include the Headwaters Forest, owned by the Pacific Lumber Company (Pacific Lumber),<sup>1</sup> and two adjoining properties: the Elk Head Springs Forest, also owned by Pacific Lumber, and a portion of the Elk River property owned by the Elk River Timber Company. After acquisition, these properties will be combined as the Headwaters Forest. In September 1996, the federal government, the state of California, MAXXAM, Inc. (Pacific Lumber's parent company), and Pacific Lumber signed an agreement for the federal and California governments to acquire the properties in exchange for \$380 million in cash and assets from the United States and California. As part of the acquisition agreement, California will contribute \$130 million to purchase the properties.

The law requires that the properties be purchased within approximately 16 months of the law's passage, which would be by March 1, 1999. Before the acquisition can occur, a number of statutory conditions must be met, including the completion of an appraisal of the properties and a review by the Comptroller General of the appraisal within 30 days of his receiving it. Furthermore, the law requires the Secretary of the Interior to provide an opinion of the value of the land to be acquired, which is to include the total value of all compensation to be provided for the acquisition.<sup>2</sup> The new Headwaters Forest will be managed by the Department of the Interior's Bureau of Land Management (BLM).<sup>3</sup> For this reason, BLM arranged for and reviewed two appraisals of the properties involved in the acquisition: one appraisal of the combined Headwaters Forest and Elk Head Springs Forest properties (from here on referred to as the Headwaters property) and a second appraisal of the Elk River property.

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<sup>1</sup>As appropriate, we use the name Pacific Lumber to refer to the company and any of its wholly owned subsidiaries.

<sup>2</sup>Total compensation is to include tax benefits. The Secretary deferred to the Internal Revenue Service and the California Franchise Tax Board as to the final amount of tax benefits.

<sup>3</sup>A final decision on the coordination of federal and state management of the Headwaters Forest, once it has been acquired, has not been made.

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We received the completed appraisals on November 25, 1998; this report presents the results of our review. Specifically, we reviewed the appraisals (1) to determine whether they complied with federal appraisal standards and how the values of the appraisals were derived and (2) to assess key assumptions used in the appraisals. To do this work, we reviewed federal appraisal standards and instructions, peer reviews of the appraisals, and the appraisals themselves. We discussed the key assumptions with the appraisers, BLM officials, a Department of Justice official, officials from the Department of the Interior's Office of Solicitor, forestry and acquisition officials from the state of California, and outside experts in government land acquisition. In the limited time available to us, we reviewed only the appraisal reports and the reports' appendixes related to timber inventories. We reviewed timber inventory data for the properties and interviewed the timber experts who established the inventory levels used in the appraisals. We did not review other technical appendixes, proprietary data, or supporting analyses used in developing the appraisals.

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## Results in Brief

We did not identify any areas in which the appraisals of the Headwaters and Elk River properties deviated from federal appraisal standards. Federal appraisal standards state that the government should appraise a property to be acquired at its fair market value. The appraiser of the Headwaters property produced a limited appraisal<sup>4</sup> with four market values—one value for each of four timber harvest assumptions provided by BLM. In calculating these four values, the appraiser relied on two approaches: (1) estimating the current cost of the land and the timber from revenue and logging-cost estimates and (2) estimating the total net income from future timber operations and adjusting this amount to the present value of the standing trees. The appraiser of the Elk River property relied on one approach to derive fair market value, the use of comparable sale information to estimate value, and verified the result using a second approach, estimating the total net income from future timber operations and adjusting this amount to the present value of the standing trees. Following these standards led the appraiser to estimate the value of the Headwaters property at \$135 million, \$250 million, \$350 million, or \$405 million, depending on the assumed harvest level. The Elk River property was appraised at \$78.4 million. The Secretary, in his opinion of value, determined that the \$380 million authorized for the combined

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<sup>4</sup>Under some circumstances, a limited appraisal can be performed, which means an appraiser can perform an assignment that calls for something less than or different from work that would otherwise be required by the guidelines.

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properties falls within these appraised values.<sup>5</sup> The Secretary's opinion of value also found the acquisition to be in the best interests of the United States because it represents an opportunity to set aside an irreplaceable resource for the public.

Our work found that in both appraisals, the need to make key assumptions during the appraisal process tended to increase uncertainty about the appraised values. For the Headwaters property appraisal, these assumptions are that (1) a past timber inventory was reliable, (2) certain levels of harvest could be achieved, (3) the proper land use and environmental permits would be in place and harvesting could begin after 1 year, and (4) the acquisition of the parcel had no effect on the value of Pacific Lumber's remaining holdings. The Elk River appraisal used an increased timber harvest volume that was based on the assumption that the timber volume should include anticipated timber growth through the date of the expected acquisition. We did not estimate the specific monetary impact of these assumptions. However, using different assumptions would have changed the appraised values. For example, if timber harvest permits had been delayed for a year, the present appraised value of the Headwaters property would have been lower. On the other hand, if for the lower harvest premises, the harvest levels had been more heavily weighted toward the higher-value timber, then the appraisal values would have been higher. Justice and BLM officials noted that the appraisals could not have been completed by statutory deadlines without making assumptions to address these issues. Although we note that using different assumptions would have changed the appraisal values, we do not find the use of the assumptions unreasonable.

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## Background

The Headwaters Forest in Humboldt County, California, includes the largest grove of virgin old-growth redwood timber in private U.S. ownership. It is currently owned by Pacific Lumber, but has been the focus of preservation efforts by the public for at least 10 years. Most recently, it has been identified as habitat for the marbled murrelet—a robin-sized seabird—which is listed as endangered under California law and as threatened under the Endangered Species Act (ESA). Both California and the United States provide protection for threatened and endangered species, as well as provide for the protection of habitat for listed species. Under ESA, it is unlawful for any person or entity to take any threatened or endangered species. The term “take” includes actions that

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<sup>5</sup>In his opinion of value, the Secretary discusses several appraisals, completed in 1991 and 1993, which indicate a range of values for portions of the Headwaters tract of \$375 million to \$705 million.

harm, kill, capture, or collect such species. Furthermore, under Interior's regulations, the term "harm" is defined to include significant habitat modification and degradation that kills or injures wildlife by impairing essential behavior, such as breeding and sheltering. The Secretary of the Interior may, under ESA, issue an incidental take permit for a threatened or endangered species in line with a habitat conservation plan, which, among other things, specifies the impacts that are likely to result from the taking and measures to mitigate these impacts.

Additional protections of timberland exist under California law. Under the California Forest Practice Rules, timber harvesters must operate under approved timber harvest plans and be licensed. Additionally, large harvesters may submit a sustained yield plan for long-term harvesting. In 1995 and 1996, when Pacific Lumber applied for a permit to conduct a timber harvest operation on the Headwaters property, its application was denied by the state. The state determined that Pacific Lumber cannot harvest its timber without a habitat conservation plan and an incidental take permit. The company has filed two takings lawsuits against the state and federal governments claiming that the endangered species regulations for the marbled murrelet do not allow it to harvest the timber.<sup>6</sup>

As a result of negotiation efforts to preserve the redwood trees, in September 1996, Pacific Lumber, MAXXAM, Inc., the state of California, and the federal government agreed to exchange the Headwaters property for up to \$380 million in state and federal assets. As part of the agreement, the federal and state governments will acquire almost 7,500 acres, including the Headwaters property, the Elk Head Springs property, and a portion of the Elk River property. The portion of the Elk River property that will remain with the Headwaters property is a wishbone-shaped parcel of about 1,700 acres; it includes a buffer for the old-growth trees and a 150-foot buffer on either side of the Elk River to protect the riparian habitat. Pacific Lumber will receive about \$300 million and the remaining 7,704 acres of the Elk River property, including an island of land—essentially, an inholding<sup>7</sup>—within the newly acquired Headwaters property and buffer zone. To this exchange, the federal government will contribute \$250 million in funding and the state will contribute \$130 million. One of the conditions of the acquisition agreement is that Pacific Lumber will develop, for the rest of its land, a habitat conservation plan for the purposes of receiving an incidental take permit for the

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<sup>6</sup>A taking may occur when government regulation of land prevents the landowner from having any beneficial use of his or her land.

<sup>7</sup>An inholding is private property completely within the boundaries of public land.

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marbled murrelet and other species. At the same time, Pacific Lumber will submit a sustained yield plan for timber harvesting to the state of California. Yet another condition of the agreement is that Pacific Lumber will dismiss its takings lawsuits filed in 1996 against the state and federal governments. The acquisition will not proceed if any of these conditions are not met. BLM and Justice officials stated that negotiations on these issues have been difficult and have threatened the completion of the agreement, which, if it falls through, could cause Pacific Lumber to continue its takings suits.

The Congress, in its fiscal year 1998 appropriation for the Department of the Interior and related agencies, authorized and appropriated up to \$250 million for Pacific Lumber's Headwaters Forest. We noted in a report last year that there was uncertainty about the property's fair market value, and the Congress subsequently required that the property be appraised before being acquired.<sup>8</sup> According to the law's conference report, the appraisal had to be done in compliance with federal appraisal standards and other applicable laws and regulations governing federal land acquisitions. Furthermore, according to the legislation, the appraisal had to be reviewed by the Comptroller General within 30 days of his receiving the appraisal and had to be provided to the House Committees on Resources and Appropriations and the Senate Committees on Energy and Natural Resources and Appropriations. The Chairmen of the House and Senate Appropriations Subcommittees on Interior and Related Agencies also requested that we do this work. Further legislative conditions for the use of federal funds to acquire the properties include the issuance to Pacific Lumber of an incidental take permit based on a habitat conservation plan for the remaining Pacific Lumber land, and approval by the state of California of a sustained yield plan for the remaining Pacific Lumber property.

Originally, the federal side of the acquisition was being managed jointly by BLM and the Department of Agriculture's Forest Service. In 1997, the Forest Service entered into a contract with an appraiser to determine the value of the Elk River property. BLM entered into a contract in 1997 with an appraiser to determine the value of the combined Headwaters and Elk Head Springs properties. Subsequently, in late 1997, BLM was made responsible for managing the entire Headwaters acquisition, including the Elk River appraisal process. The appraisals were to be completed in mid-March 1998; however, they were not completed until September 1998.

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<sup>8</sup>Federal Land Management: Estimates of Timber Value and Economic Effects of Harvesting the Headwaters Forest (GAO/RCED-97-241R, Sept. 24, 1997).

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During the summer of 1998, BLM contracted for peer reviews of the appraisals. After the peer reviews were completed, BLM reviewed and approved the appraisals, determined that they met federal appraisal standards, accepted the appraised values, and forwarded them to the Secretary of the Interior. The appraisals and the Secretary's opinion of value were made available for our review on November 25, 1998.

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## Appraisal Standards and Results of the Headwaters and Elk River Property Appraisals

In its instructions for the Headwaters and the Elk River property appraisals, BLM instructed the appraisers to follow federal appraisal standards in valuing the properties. These standards state that the government should appraise a property to be acquired at the fair market value. According to the standards, fair market value is the amount for which a property would be sold—for cash or its equivalent—by a willing and knowledgeable seller who is not obligated to sell to a willing and knowledgeable buyer with no obligation to buy.

Federal appraisal standards provide for several methods of determining fair market value, including analyzing prior sales of comparable properties or of the identical property. While the standards indicate that the use of a sales comparison approach is normally the most accurate method, other methods, such as the income approach or cost approach, may be used when comparable sales data are not available. The income approach involves estimating the value of a resource on the basis of the present value of the anticipated future income from production. Generally, the income method values the estimated future income stream from a project and adjusts the value of this income stream to its value today by using a discount rate.<sup>9</sup> The cost approach also involves estimating the value of a resource but is based on the current costs to reproduce or replace the existing resource in addition to the value of the bare land.

In cases where existing land use regulations could affect the value of an appraised property, professional standards require the appraiser to consider the effect of regulations on the use and value of the property. The harvesting of timber on the Headwaters property has been affected because the property contains habitat for the threatened marbled murrelet, as well as other species; harvesting has also been affected by state forest practice statutes and regulations. For the purposes of appraising the Headwaters property, BLM instructed the appraiser to assume that all land use plans and permits were in place to allow for the

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<sup>9</sup>A discount rate reflects the earning power of money over time and the risk associated with this earning power. The choice of a discount rate is a key factor in determining the net present value; in effect, the lower the discount rate, the higher the net present value of an asset.



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harvesting of the property. Although the Elk River property has identified threatened and endangered species, it does not have old-growth redwood stands, which provide a unique habitat for some threatened and endangered species.

Professional appraisal standards permit limited departures from certain guidelines, but only if an appraiser determines that the appraisal results will not be confusing or misleading and if the report is clearly identified as a limited appraisal. For the appraisal of the Headwaters property, because it has been identified as threatened and endangered species habitat and no comparable habitat conservation plans for the species exist, the amount of timber harvest allowed is uncertain. Therefore, BLM instructed the appraiser to assume specific timber harvest levels to avoid speculation on the amount of timber that could be harvested. The appraiser was instructed to assume that the owner could harvest 25 percent, 50 percent, 75 percent, and 95 percent of the merchantable timber on the property.<sup>10</sup> The appraiser determined that relying on this set of critical assumptions would result in a limited appraisal but would not confuse or mislead. BLM did not include specific instructions on the levels of harvest to be used in the Elk River appraisal.

In cases in which the government does not acquire an entire property, but acquires only a piece of it, federal appraisal standards state that the preferred way to value the partial property is to use a “before and after” method. This method occurs when the government acquires property by condemnation or negotiated settlement.<sup>11</sup> In the before and after method, the appraiser estimates the value of the whole property before the transaction and reduces it by the value of the property remaining in private ownership after the transaction is completed. Although Pacific Lumber owns approximately 200,000 acres of timberland in northern California, BLM’s instructions directed the appraiser to estimate the value of the Headwaters property as if it were not part of the larger Pacific Lumber holdings (i.e., a stand-alone property). The appraisal instructions included this direction because, according to a Justice official, the Headwaters agreement is not a negotiated settlement of the company’s lawsuits, but is an agreement to acquire land for which discussions have been ongoing for almost a decade. According to this official, if the property is acquired, an additional provision of the agreement is for the

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<sup>10</sup>Merchantable timber refers to trees with a minimum diameter, measured at breast height, of 10 inches.

<sup>11</sup>Under condemnation, a government acquires property in the public interest and pays just compensation to the property owner.

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dismissal of the company's two takings lawsuits against the state and federal governments. The Elk River property was also appraised as a stand-alone property.

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## Estimate of Headwaters Property's Value

The Headwaters property appraisal covers the 4,500-acre Headwaters Forest and the 1,125-acre Elk Head Springs Forest, both of which are old-growth forests owned by Pacific Lumber. The appraiser estimated four values for the Headwaters property—one for each harvest premise provided by BLM in its instructions. In establishing these values, the appraiser used two approaches—the cost approach and a discounted cash flow approach, which is an income method. According to the appraiser, there are no timber properties or sales of properties like the Headwaters property—that is, large properties with both old-growth trees and marbled murrelet populations—which makes the sales comparison approach impossible.

For both methods, the appraiser estimated the total amount of timber available for harvest, the time needed to harvest the timber under each premise, and the costs of logging the timber, which include the costs for transportation. Using timber inventory data provided by an outside consultant, the appraiser estimated that the property contains about 670 million board feet (mmbf) of timber.<sup>12</sup> He then estimated that it would take 5 years to harvest 25 percent of the timber, 8 years to harvest 50 percent of the timber, 11 years to harvest 75 percent of the timber, and 15 years to harvest 95 percent of the timber on the property. The appraiser estimated that logging costs would be the same under each premise, about \$90 per thousand board feet (mbf).<sup>13</sup>

The appraiser relied on the discounted cash flow analysis to establish the four premise values and used four values established using the cost approach to verify the discounted cash flow values. He then reconciled the two sets of values. In the discounted cash flow method, the appraiser estimated the net annual income under each harvest premise—for example, 25 percent over 5 years—and calculated the present value of the total net income stream. To this, he added the present value of the remaining land and trees as if they were sold at the end of the harvest period. For each premise, the appraiser used a discount rate of 9 percent

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<sup>12</sup>One million board feet (mmbf) is a measure of timber volume equal to 1 million boards measuring 1 foot wide by 1 foot long by 1 inch thick.

<sup>13</sup>One thousand board feet (mbf) refers to a measure of timber volume equal to 1,000 boards measuring 1 foot wide by 1 foot long by 1 inch thick.

and used appreciation rates for timber values of 1 to 4 percent, depending on the type of tree. In the cost approach, the appraiser estimated that the immediate harvest value of the land and timber would be \$590 million; he then multiplied the four premise percentages—for example, 25 percent—to get the value of the timber harvested under each premise. Because the timber on the property could not be harvested in 1 year, the appraiser discounted the values using a rate of 8 percent. For the cost approach, the appraiser used a 3.5-percent appreciation rate.

The Headwaters property appraisal established four values based on four separate harvest premises. These four values are displayed in table 1.

**Table 1: Headwaters Property Appraised Values**

Dollars in millions	
<b>Assumption about future timber harvest amount</b>	<b>Conclusion about property value</b>
25-percent harvest	\$135
50-percent harvest	250
75-percent harvest	350
95-percent harvest	405

**Estimate of Elk River Property’s Value**

The Elk River property appraisal covers the 9,468 acres of second-growth timber commonly referred to as the Elk River Timber Company property, even though the owner of record is L.E.T., a joint venture.<sup>14</sup> Over 1,700 acres of this property, which adjoins the north side of the Headwaters property, will be retained by the government to act as a buffer for the old-growth forest. The remaining acreage will be part of the exchange with Pacific Lumber for its Headwaters properties.

The appraiser responsible for the Elk River property appraisal relied on a sales comparison approach and verified the value using a discounted cash flow approach.<sup>15</sup> For both approaches, the appraiser estimated the total amount of timber available for harvest and the costs of logging the timber, which include the costs for transportation. Using timber inventory data provided by an outside consultant, the appraiser estimated that the property contains about 207 mmbf of timber. The appraiser estimated that

<sup>14</sup>A memorandum of agreement signed by the Elk River Timber Company indicates it will acquire title to the Elk River property.

<sup>15</sup>The appraisers for these two properties each used data based on other timber sales. Each appraiser used a hybrid of the sales comparison and cost approaches that utilizes practices from both approaches.

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logging costs would be the same under each approach, about \$132 per mbf.

Using the sales comparison approach, the appraiser gathered data on the price of logs delivered to mills and the sale price of standing timber. He calculated a price per thousand board feet for each type of timber—for example, redwood—and multiplied these prices by the amount of timber, according to type, that could immediately be logged. The appraiser estimated that about 109 mmbf of the timber on the property could be logged immediately. To this value, the appraiser added the present value for the remaining land and trees.

The appraiser used a discounted cash flow analysis to verify the value established by the sales comparison approach. In the discounted cash flow analysis, the appraiser assumed that 12.5 mmbf of timber would be cut each year for 10 years and calculated the discounted value of the related net income stream. To do this, he used an 11-percent discount rate and an annual price appreciation rate of 3.5 percent.<sup>16</sup> Finally, he added the net present value of the property as if sold at the end of the 10-year harvest.

In an addendum to the appraisal, the appraiser allocated the timber assets and the associated value between the government's and Pacific Lumber's parcels. To do this, he estimated the volume of loggable timber on each parcel and multiplied this volume by the estimated price paid by lumber mills, adjusted for logging costs. The appraisal established a value of \$78.4 million for the property. The appraiser then allocated \$51.8 million of this value to the portion of the property to be given to Pacific Lumber and \$26.6 million to the portion of the property to be retained by the government.

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## Secretary of the Interior's Opinion of Value

The Secretary wrote an opinion of value that summarized the purpose of the Headwaters agreement and acquisition. This document also summarized the results of the two appraisals and concluded that the authorized public expenditure of \$380 million is within the range of appraised values; the values range from \$135 million to \$405 million for the Headwaters property and include an additional \$26.6 million for the portion of the Elk River property to be retained by the government. The opinion also found the acquisition to be in the best interests of the United

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<sup>16</sup>The discount rates used in the two appraisals are different because they are based on the independent judgments of the two appraisers. According to BLM officials, the market for old-growth redwood is less risky than the market for young-growth timber.

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States because it represents an opportunity to set aside an irreplaceable resource for the public.

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## Key Assumptions Used in the Headwaters and Elk River Appraisals

The Headwaters and Elk River property appraisals relied on several key assumptions. The need to make key assumptions during the appraisal process tended to increase uncertainty about the appraised values. In general, the need to make assumptions about key unknown factors increases the uncertainty associated with any estimate of appraised value. Although we have not determined the cumulative effect of relying on these assumptions, it appears that some of these assumptions tended to increase the appraised value of the property while others tended to decrease the appraised value. Although we note that using different assumptions would have resulted in different appraised values, we do not find the use of the assumptions unreasonable.

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## Headwaters Appraisal

In estimating the four fair market values of the Headwaters property, the appraisal relied on several key assumptions. The key assumptions made in the appraisal that we address are that (1) a past timber inventory was reliable for the purposes of the appraisal, (2) certain levels of harvest could be achieved, (3) the proper land use and environmental permits would be in place and harvesting could begin after 1 year, and (4) the acquisition of the parcel had no effect on the value of Pacific Lumber's remaining holdings. According to Justice and BLM officials, with more time to do the appraisals, some of the assumptions might not have been necessary because more information might have been available. Under such circumstances, the habitat conservation plan, the sustained yield plan, and the incidental take permit for the remaining Pacific Lumber property could have been nearer completion, if not completed, before the appraisal occurred. These documents could have served as guidance to make some of the appraisal assumptions more precise. Although we note that using different assumptions in each of these four cases would have resulted in different appraised values, we do not find the use of the assumptions unreasonable.

## Government Assumed the 1992 Timber Inventory to Be Acceptable for Appraisal Purposes

The Headwaters appraisal relied on a timber inventory for the Headwaters property (not including the Elk Head Springs property) performed in 1992. The 1992 inventory involved measuring trees in specific plots on the property; as a result of this sampling, the timber was categorized into seven types, or strata. In 1997, BLM hired a consulting firm to perform a verification sample of the property to determine whether the 1992 timber

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inventory would still be a reliable estimate of timber volume. The consultants sampled the four main old-growth timber types, and that sample yielded a timber volume estimate that was 9 percent less than the 1992 estimate. Statistical tests of the samples showed that the 9-percent difference was within the sampling error acceptable to BLM and that the two volume estimates were not significantly different.<sup>17</sup> As a result, BLM used the 1992 timber inventory as the basis for determining volume in the appraisal. According to BLM officials and the forestry consultants who performed the work, the old-growth timber would not be expected to have much net growth, and for this reason, it would be appropriate to use the 1992 volume. However, in the young-growth strata of timber, which was not included in the sample, growth would occur. A new inventory might have led to a different estimate of timber volume, which, in turn, could have affected the appraised value.

#### Government Assumed Levels of Harvest

Because of marbled murrelet and forestry restrictions on the Headwaters property and the lack of comparable habitat conservation plans on other properties, the government instructed the appraiser to assume four levels of harvestability for the appraisal: 25 percent, 50 percent, 75 percent, and 95 percent. While the appraiser developed different time lines for each harvest premise, he used the same harvest scenario for each premise. This scenario included estimated discount rates, logging costs per thousand board feet, and price appreciation. However, a larger harvest—under the 95-percent premise, for example—might be delayed because of longer time frames for cutting and the possibility that harvest plans might be delayed or disapproved. Consequently, there is greater risk associated with a larger harvest. The appraiser did a sensitivity analysis for each harvest premise; however, he used the same range of discount values for both the large and small harvest levels. Given the higher risks that may be associated with larger harvest premises, a higher range of discount rates might be applied, resulting in lower appraised values for these premises.

Furthermore, the appraiser assumed, on the basis of his interpretation of BLM's instructions, that an even mix of timber types would be cut under each premise, regardless of the type or value of the timber. For example, under the 25-percent premise, 25 percent of each timber type would be cut, as opposed to cutting an equivalent volume consisting solely of old-growth redwood, the most valuable type. In reality, a purchaser interested in maximizing the profit of the property would likely harvest the most valuable timber first. As a result of this assumption, the lower harvest premises may be undervalued. The effect on the higher harvest

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<sup>17</sup>The statistical tests used confidence levels of 95 percent.

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premises would be less severe because more timber would be cut under these premises.

Government and Appraiser Assumed That Permits Would Be Issued

The appraisal relied on the assumption that a harvester would have received the required governmental permits and would have been able to commence harvesting in a timely manner. For each premise, the appraiser assumed harvesting would begin after 1 year, during which all harvest plans and permits would be finalized. Prior to harvesting, timber operators are required to be licensed, and in addition, operators must submit timber harvest plans for the state's approval. Furthermore, when threatened and endangered species habitat is involved, a habitat conservation plan may need to be approved before timber harvest plans can be approved. At the time of the agreement for the acquisition of Headwaters, the company had submitted at least one timber harvest plan for this area but had not developed a habitat conservation plan. According to both state and BLM officials, although a timber harvest plan can be approved in about 10 weeks, there is less experience with processing a habitat conservation plan and this could take years to finalize. We believe the net present value of future income from the timber would have been lower if delays had occurred.<sup>18</sup> If the appraiser had assumed, for example, a 2- to 3-year delay in obtaining permits, he would have obtained a lower appraised value under each premise.

Government Assumed No Value Added to Remaining Pacific Lumber Holdings

The Headwaters property makes up about 5,600 acres of the 200,000 acres owned by Pacific Lumber in Humboldt County. Because the government is acquiring only part of the property, BLM instructed the appraiser to estimate the value of the 5,600 acres without considering the fact that the property is part of a larger ownership. Justice officials and officials from Interior's Office of the Solicitor believe the Headwaters acquisition is an independent transaction begun before the lawsuits and the negotiated agreement to dismiss the company's takings lawsuits. Because of this view, BLM, Justice, and Interior's Office of Solicitor officials instructed the appraiser to value the Headwaters property as if it were a stand-alone property and as if it were sold voluntarily.

However, the company views the acquisition as part of a negotiated settlement of the company's lawsuits. When the government acquires property through a negotiated settlement, the rules of appraisal are generally structured to measure what the property owner will lose. If only a portion of the property is acquired by a negotiated settlement,

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<sup>18</sup>Although there would be real appreciation in the timber value during the delay, the delay would cause future income to be more heavily discounted. Because the discount rate exceeds the appreciation rate, the net effect of the delay would be to reduce the net present value.

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consideration is given to the damages and/or benefits that may accrue to the property owner's remaining property. This is accomplished by estimating the market value of the entire ownership (larger parcel) before the government's acquisition and then estimating the market value of the property remaining after the acquisition. The difference between the two values is the value the owner has lost, which is equal to the value of the acquired property.

According to BLM officials, it would have been difficult to value the 200,000 acres owned by Pacific Lumber, because of both the time and work involved. Nevertheless, Pacific Lumber may benefit from the sale of the Headwaters property because the company may be able to harvest a significant portion of its remaining property under the habitat conservation plan developed as part of the Headwaters agreement. Because the appraisal instructions reflected the view that the company's sale of the property was voluntary, the appraiser did not make an adjustment to the appraised value to account for possible increases in the value to the remaining property. As a result, each of the four values may be overstated.

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## Elk River Appraisal

In estimating the fair market value of the Elk River property, the appraisal relied on one key assumption. The appraisal assumed that the property to be valued includes the anticipated net timber growth occurring between the date of value and the date of the acquisition. As stated earlier, in general, the need to make assumptions about key unknown factors increases the uncertainty associated with any estimate of appraised value. Reliance on this assumption increased the appraised value of the property, although we have not determined the specific amount of increase. While we note that using different assumptions would have resulted in different appraised values, we do not find the use of the assumption unreasonable.

## Government Agreed to a Projected Increase in Timber Volume

The timber volume upon which the Elk River property appraisal is based includes anticipated timber growth through the date of the expected acquisition. BLM instructed the appraiser to include the estimated growth on the basis of a memorandum of agreement among the state of California, the United States, Pacific Lumber, and the Elk River Timber Company. This memorandum stipulated that in exchange for including an estimate of timber growth, the Elk River Timber Company would forgo any timber harvests or other economic use of the property until the acquisition. Elk River had an approved timber harvest plan for portions of the property and could have harvested timber in those areas.



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The date of value for the appraisal is June 15, 1998, yet the timber volume used in the appraisal is projected to February 28, 1999—more than 8 months later. This projection, which was calculated by forestry services consultants for BLM, relied on a 7-percent annual growth estimate. The consultants based the growth estimate on data from the Elk River Timber Company, tree core samples they took from the property, and historical growth data for the site. While the estimate is statistically based and BLM accepted the estimated increase in volume, the amount of growth is a projection and could be more or less than estimated. As a result, the appraised value reflects additional value based on projected growth.

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## Observations

In our review of the Headwaters and the Elk River property appraisals, we did not identify areas in which the appraisals deviated from federal appraisal standards. We also did not find that the use of assumptions in the appraisal was unreasonable given the imprecision involved in appraising timber properties and the unique circumstances of this property.

The Secretary of the Interior recognized, in his opinion of value, the intrinsic worth of the irreplaceable natural resources of the Headwaters property, whereas the appraisals simply estimated the value of the properties on the basis of their use as timberlands. In the event that the Headwaters acquisition is not completed by March 1999, Pacific Lumber will have various alternatives for dealing with the limitations placed on harvesting timber on this property. One of these alternatives is the revival of its takings lawsuits. Alternatively, Pacific Lumber might seek to negotiate a habitat conservation plan, an incidental take permit, and state timber harvest plans for the Headwaters property in order to harvest timber.

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## Agency Comments

We provided the Department of the Interior with a draft of this report for review and comment. In its comments, Interior generally agreed with the information in the report. The Department also provided technical comments about the Secretary's opinion of value, the requirements and application of the Endangered Species Act, and the memorandum of agreement among Pacific Lumber, the state of California, the United States, and the Elk River Timber Company, among other things. We incorporated Interior's recommended changes or clarified the report's language as appropriate. (Interior's comments are reproduced in app. I.)

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## Scope and Methodology

We reviewed the Uniform Appraisal Standards for Federal Land Acquisitions, issued in 1992 by the Interagency Land Acquisition Conference, as well as the Uniform Standards of Professional Appraisal Practice issued in 1998, to become familiar with federal appraisal standards. We reviewed the appraisals themselves, Appraisal of Headwaters and Elk Head Springs, signed September 28, 1998, and Appraisal Report: The Elk River Timber Company, signed September 28, 1998, to become familiar with their methodology and data. We discussed both the standards and the appraisals with the Chief Appraiser and State Forester for BLM's California State Office and the contract appraisers who conducted the appraisals. We interviewed an outside appraisal expert, officials with the state of California, and other experts in government land acquisition. We also met with officials from Justice and Interior's Office of the Solicitor. Both these agencies provided BLM with legal advice on the appraisal process.

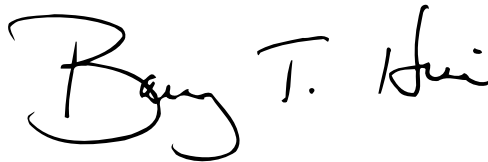
In a December 1997 letter to the Secretary of the Interior, the Committee and Subcommittee Chairmen who requested our work recommended that the Interior coordinate the appraisal process with us before we received the final appraisal. While BLM officials did apprise us of the status of the appraisal process before we received the final appraisal on November 25, 1998, they declined to provide us with any analyses or drafts of the appraisal before that date because this information was subject to review and change.

After doing some preliminary work in January and February 1998, we performed the bulk of our review in November and December 1998. Our work was conducted in accordance with generally accepted government auditing standards.

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We are sending copies of this report to the appropriate congressional committees and will make copies available to the Secretary of the Interior and other interested parties. We will make copies available to others upon request.

If you or your staff have any questions, please call me on (202) 512-3841. Major contributors to this report were Jay Cherlow, Tim Guinane, Susan Iott, Diane Lund, Dick Kasdan, Sue Naiberk, and Victor Rezendes.

A handwritten signature in black ink that reads "Barry T. Hill". The signature is written in a cursive style with a large, looping initial "B".

Barry T. Hill  
Associate Director, Energy,  
Resources, and Science Issues

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# Comments From the Department of Interior



## United States Department of the Interior

OFFICE OF THE SECRETARY  
Washington, D.C. 20240

DEC 21 1998

Mr. Barry Hill  
Associate Director  
Energy, Resources and Science Issues  
United States General Accounting Office  
Washington, DC 20548

Dear Mr. Hill:

The Department has reviewed the General Accounting Office's draft report entitled Federal Land Management: Appraisals of Headwaters Forest Properties. We recognize the limited time provided to GAO for review of the appraisals prepared for the Bureau of Land Management (BLM) on the Headwaters, Elk Head Springs, and Elk River Timber Company (ERTC) properties, and appreciate the opportunity to provide comments in advance of the report's final publication and submission to Congress.

We are pleased that the draft report concludes that the appraisals comport with federal appraisal standards. We provide the following comments to clarify several points made in the draft report.

The draft report states that the Secretary's opinion of value concluded that the \$380 million appropriated by Congress and the California Legislature for purchase of the Headwaters and related properties was within the range of values determined by the two appraisals currently under review by GAO. Draft Report at 3, 14. In fact, the Secretary's opinion of value discusses and relies not only on these two most recent appraisals, but on several appraisals of the Headwaters tract conducted in 1991 and 1993.

The discussion of the Federal Endangered Species Act (ESA), see Draft Report at 4-5, 9, should be clarified as follows. Under section 9(a)(1)(B) of the ESA, 16 U.S.C. § 1538(a)(1)(B), it is unlawful for a person or entity to "take" any threatened or endangered species. "Take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19). "Harm" is further defined in regulations to include "an act which actually kills or injures wildlife, [and] . . . may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 CFR § 17.3. Section 10 of the ESA authorizes the Secretaries of the Interior and Commerce to issue permits allowing for the "take" of endangered or threatened species, if such taking occurs incidental to otherwise legal authority. 16 U.S.C. § 1539(a)(1)(B). To receive an "incidental take permit" under section 10(a)(1)(B), an applicant must submit a "conservation plan" under section 10(a)(2)(A) (referred to as a "habitat conservation plan" or "HCP") that specifies, among other

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Mr. Barry Hill  
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things, the impacts that are likely to result from the taking, and the measures the permit applicant will undertake to minimize and mitigate such impacts.

The discussion regarding the effect of land use regulation on the value of appraised property should be clarified. Draft Report at 9 ( 1¶, 2nd sentence). The harvesting of the Headwaters property would be affected not only by a concern for threatened and endangered species but by State forest practice statutes and regulations, and other provisions of law.

The draft report states that the ERTC property does not contain threatened or endangered species. Draft Report at 9. This is incorrect. Some of the endangered and threatened species found on Pacific Lumber's property are also found on the ERTC property. As was discussed in the Secretary's opinion of value, the distinction between the Headwaters and Elk Head Springs properties, on the one hand, and the ERTC property, on the other hand, is not the presence of endangered or threatened species. A multi-premise appraisal was used on the Headwaters and Elk Head Springs properties because those properties contain an old-growth redwood forest, the uniqueness of which as a habitat for threatened and endangered species there makes it difficult to determine the exact amount of timber that could be harvested after compliance with State and Federal forestry and environmental protection laws. The ERTC property, on the other hand, does not contain old-growth redwood stands.

In the discussion of timber harvest under each of the four harvest scenarios set out in the appraisal of the Headwaters and Elk Head Springs properties, the draft report states that a "purchaser of the property would likely harvest timber so as to maximize profit by cutting the most valuable timber first." Draft Report at 17. We are not aware of the basis for this statement.

The draft report states that "the company views the acquisition as part of a negotiated settlement of the company's lawsuits." Draft Report at 19. As officials of the BLM, the Solicitor's Office, and the Department of Justice stated to GAO during its review, we do not agree with the company's assertion, but instead view the acquisition as a stand-alone transaction. Further, the draft report states that "the appraiser did not make an adjustment to the appraised value for loss or addition to value remaining to the property, and, as a result, each of the four values may be overstated." Draft Report at 19. We agree that no such adjustment has been made, but we note that the result of such an adjustment could have been either an upward or a downward change in value.

The draft report discusses the memorandum of agreement (MOA) between the United States, the State of California, and the ERTC to include in the appraised value the estimated growth of the ERTC property in exchange for ERTC's agreement to refrain from harvesting timber under previously-approved Timber Harvest Plans. The draft report then states that "the appraised value reflects additional value based on projected growth." Draft Report at 20. Our understanding is

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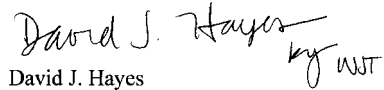
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that appraisals of timber property typically include growth projections. Further, if the ERTC had harvested timber after the date of the MOA, the value of the property would have been lower than the appraised value.

Thank you for the opportunity to provide these comments on GAO's draft report.

Sincerely,

A handwritten signature in cursive script that reads "David J. Hayes". To the right of the signature, there are initials "WST" written in a smaller, less legible script.

David J. Hayes  
Counselor to the Secretary



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