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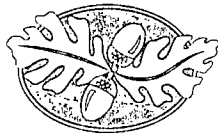
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FOREST POLICY CENTER

May 13, 1993

Katie McGinty
Director of Environmental Policy
The White House
1600 Pennsylvania Ave NW
Washington, DC 20500

Dear Katie:

Enclosed is a copy of the Forest Policy Center's recently-released discussion paper, *Components of A Forest Conservation and Economic Transition Assistance Plan for the Pacific Northwest*. This is not a "plan," but an analysis of several policy mechanisms that should be a part of whatever plan is devised for the region.

If you have any comments, questions, or suggestions regarding this discussion paper, please don't hesitate to give me a call at (202) 667-3300. If you would like to order additional copies, please ask to speak with Susan Stedfast.

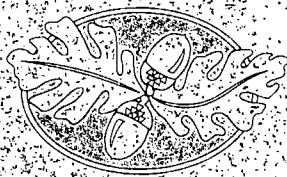
The Forest Policy Center is committed to assisting in every appropriate way in the development of a workable solution to the situation in the Pacific Northwest, one that will facilitate the evolution toward a regional economy that is ecologically sound, economically viable, and socially responsible. We appreciate your efforts in that regard as well.

Sincerely,

V. Alaric Sample
Director

**COMPONENTS OF A
FOREST CONSERVATION AND
ECONOMIC TRANSITION ASSISTANCE PLAN
FOR THE PACIFIC NORTHWEST**

A Discussion Paper



FOREST POLICY CENTER

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V. Alaric Sample
May 12, 1993

Introduction

On April 2, 1993 in Portland, Oregon, President Bill Clinton, Vice President Albert Gore and the heads of the departments of Agriculture, Interior, Labor, Commerce, OMB and EPA gave their undivided attention to listening to the people of the Pacific Northwest and trying to understand the controversy over habitat protection for the threatened northern spotted owl. Not since the days of Theodore Roosevelt has a sitting president so dedicated his own time and that of his senior Administration officials to an issue of forest conservation. In Roosevelt's day, the talk was of sustained-yield forestry, and of halting the overexploitation of forest resources that threatened the supply of timber for a rapidly expanding nation. In Clinton's day, the talk has evolved to the protection and sustainable management of forest ecosystems, managing our forest resources in a way that is simultaneously ecologically sound, economically viable, and socially responsible.

Regionally, nationally, and internationally, conservation and economic interests that have traditionally opposed one another have begun to recognize that a healthy environment and a healthy economy are not mutually exclusive, but are mutually dependent. Over the long term, it is not possible to sustain one without sustaining the other. In this new awareness, President Clinton has challenged us all to begin crafting a balanced, workable solution to one of the most difficult and seemingly intractable resource management issues of our time, and to create the political consensus that will be crucial to its successful implementation.

Following the Forest Conference in Portland, President Clinton ordered federal officials to develop a plan of action for his review by June 1, 1993 and articulated five key principles to guide their work:

1. Remain cognizant of the human and economic dimensions of the problem. Where sound management policies can preserve the health of forest lands, timber sales will go forward; where this requirement cannot be met, the plan must offer new economic opportunities for year-round, high-wage, high-skill jobs.
2. Protect the long-term health of our forests, wildlife, and waterways, holding them in trust for future generations.
3. Actions must be "scientifically sound, ecologically credible, and legally responsible."
4. Produce "a predictable and sustainable level of timber sales and non-timber resources that will not degrade or destroy the environment."

5. **Make the government work together, ending the gridlock within the federal government through insistence on collaboration, not confrontation.**

To accomplish this and develop the Administration plan, three "working groups" were established:

- * **An Ecosystem Management Assessment** working group was established to "identify management alternatives that attain the greatest economic and social contribution from the forests of the region and meet the requirements of the applicable laws and regulations, including the Endangered Species Act, the National Forest Management Act, the Federal Land Policy and Management Act, and the National Environmental Policy Act."
- * **A Labor and Community Assistance** working group is to address the forests' role in regional economic development and diversification, "accommodating properly functioning markets and facilitating the transitions inevitable in the modern global economy." A program to assist communities and displaced workers is to be developed not to dictate preferred paths for economic development but to "build upon the independence and strength of these communities and their residents and provide them with the tools needed for economic revitalization based on their own needs and on potential new opportunities in forest-related employment."
- * The charge for the **Agency Coordination** working group recognizes that interagency coordination "becomes even more critical as we move toward an ecosystem approach to forest management where a number of agencies must be involved in planning and implementing a management strategy," and requires the development of a plan to improve the working relationship among federal and state agencies in the region and eliminate impediments that block coordinated action.

Summary

The following discussion paper offers a brief background and analysis of six key components of a forest conservation and economic transition assistance plan for the Pacific Northwest that is consistent with the principles articulated by President Clinton. AMERICAN FORESTS and the Forest Policy Center strongly support the President's principles as consistent with those that have guided our own organization's efforts in forest conservation since its founding in 1874. To briefly summarize the major points of the discussion paper:

- * The use of **land stewardship contracts** in place of conventional timber sales offers opportunities for accomplishing needed resource management and ecosystem restoration activities, contributing as much as **3.2 billion board feet annually** (for the next ten years) to the Pacific Northwest timber supply, and generating as many as **52,000 jobs** in forest products and related employment. Work would be financed through a credit arrangement and would not affect federal budget outlays.

- * Ecosystem restoration actions are needed east of the Cascades in the Blue Mountains and in Northeastern Washington to reduce the risk of catastrophic wildfire, and to repair watersheds and restore the natural dynamics and resiliency of fire-dependent forest ecosystems. In the near term, these activities could generate more than **500 million board feet of timber annually** and support approximately **8,000 jobs** in forest products and related industries.
- * The expected decline in timber harvesting on federal lands will have a major impact on **federal revenue sharing** with local governments, which is currently based on a portion of federal timber receipts. Shifting to a **formula based on federal land area in each county, with payments based on a rolling ten-year average during a five-year transition period**, would fairly compensate local government for lost taxes due to tax-exempt federal land ownership and provide a high level of income that is far more stable and predictable than that based on cycling timber harvest levels and prices.
- * **Private forest lands** can play an important **complementary role to public forest lands in an ecosystem-based strategy** to protect late-successional forest habitat for the spotted owl as well as other species that might otherwise become threatened or endangered in the future. It is important to identify and eliminate the disincentives that now exist for closer cooperation with adjacent public and private forest landowners, without undercutting the economic purposes for which private organizations and individuals own and manage their forest land.
- * Income tax-based **federal log export subsidies** give foreign log buyers a competitive advantage over domestic purchasers, requiring a domestic buyer to offer a price at least 7 percent higher in order for the log seller to receive the same after-tax income as selling to a foreign buyer. Elimination of this subsidy could re-route approximately **250 million board feet annually** back to Pacific Northwest mills, sustaining at least **1,000 jobs** that otherwise would be lost. In addition, it would save an estimated \$100 million annually that the federal government could apply to economic transition assistance programs in the Pacific Northwest.
- * Recent rapid advances in remote-sensing and geographic information systems (GIS) technology have made possible the development of better ecological information on the extent, location, and nature of old-growth forests than existed even when the "Gang of Four" analysis was performed. **Use of GIS technology and improved information in a setting that allows open and direct interaction** among scientists and stakeholders may uncover alternatives that are as yet unknown and untried. This approach should be an explicit part of the planning process, and sufficient funds and other resources should be made available to ensure its success.

Land Stewardship Contracts: Opportunities for Ecosystem Management and Employment

A new approach to timber sale contracting offers opportunities to accomplish needed ecosystem management and ecological restoration activities in the Pacific Northwest, while at the same time providing additional employment in the forest-products and related industries in local communities. Land stewardship contracting fosters the integrated resource management approach central to the purposes of the National Forest Management Act (NFMA) and the Federal Land Policy and Management Act (FLPMA); such an approach is now even more important in order to effectively and successfully implement forest ecosystem management policies on federal lands.¹

For the purposes of the economic transition assistance plan for the Pacific Northwest forests affected by the need to protect old-growth habitat, land stewardship contracting can provide employment opportunities for woodworkers in and around their own communities with little or no retraining necessary. Financing this work from current income to the federal land managing agencies can help minimize the impact of the economic transition assistance package on the federal budget deficit.

Background

The FY 1992 and FY 1993 appropriations bills for the Forest Service directed the agency to test a new approach to federal timber sale contracting on several western national forests. This approach, termed "land stewardship contracting," authorized the Forest Service to "apply the

¹ National Forest Management Act, 16 U.S.C. 1600; Federal Land Policy and Management Act, 43 U.S.C. 1701.

value of a reasonable portion of the value of timber removed . . . as an offset against the cost of stewardship services received including, but not limited to, site preparation, replanting, silviculture programs, recreation, wildlife habitat enhancement, and other multiple-use enhancements."² The stewardship contracts were to be used "to help the private sector promote the Forest Service ecosystem management initiative . . . [and] to give contractors an incentive to become as concerned with sustaining ecosystems as with sustaining trees."³

In terms of procedure, this system would allow the Forest Service to contract for an array of ecosystem management and ecological restoration services as part of a total land management "package deal" with a single contractor. The contractor would be compensated for these services by receiving credit toward the amount owed to the Forest Service for timber harvested as part of the contract activities. This approach is essentially the same as the "purchaser credit" system used for many years to compensate timber purchasers for road construction and maintenance associated with a timber sale.⁴

The idea of land stewardship contracts has been well received by the Forest Service, particularly at the field level where closer integration of all land management activities is seen as a key not only to better resource management but greater program effectiveness and cost efficiency. National forest plans, developed pursuant to NFMA, are developed using an integrated resource management approach.

But integration is made difficult in the implementation of these plans by the function-by-function organizational structure of the agency (timber, recreation, wildlife, range, etc.) and by the *disintegration* of planned integrated resource management projects that takes place during

² Congressional Record, Senate, September 13, 1991, p. 12973.

³ Ibid.

⁴ National Forest Roads and Trails Act, 16 U.S.C. §§ 532-538.

the annual budgeting and appropriations process.⁵ A 1988 GAO evaluation of a Congressionally-authorized Forest Service pilot project testing an integrated "end-results" approach to Forest Service appropriations found that program accomplishments for all resources improved while overall costs were reduced. GAO observed further that this approach would help the Forest Service carry out the forest plans mandated by Congress and would facilitate greater agency accountability for appropriations.⁶ Despite this positive independent assessment, Congress has not taken necessary action to expand end-results budgeting beyond the few national forests that participated in the original pilot program.

Results to date of stewardship contract pilot study

Preliminary results of the land stewardship contracts pilot study have also been positive, and in the Forest Service's FY 1993 appropriations the number of pilot forests was expanded to include the Kaibab (AZ), Coconino (AZ), Dixie (NV), Idaho Panhandle (ID), and Lake Tahoe (NV). Congress has asked the Forest Service to study how receiving services in lieu of revenue would affect the agency's adherence to other laws relating to contracting and to revenue sharing programs. Because services under land stewardship contracts would be credited against what purchasers would normally pay for the timber they remove, Congress has been particularly interested in how this would affect the 25 percent of Forest Service receipts that are normally paid to counties in lieu of taxes.⁷ There was similar concern over the purchaser credit system used for road construction, which was resolved by adding the value of the foregone timber receipts to the amount on which the calculation of the 25 percent payment to counties is based.

⁵ Sample, V. Alaric, *The Impact of the Federal Budget Process on National Forest Planning* (Westport, CT: Greenwood Press, 1990).

⁶ U.S. Controller General, *Forest Service: Evaluation of "End-Results" Budgeting Test*, GAO/AFMD-88-45 (Washington, DC: U.S. General Accounting Office, 1988).

⁷ Twenty-Five Percent Fund Act of 1908, 16 U.S.C. 500.

Serious consideration should be given to developing a means other than payment of a share of timber receipts to compensate local government for the tax-exempt status of federal lands (see section on Compensating for Impacts on Federal Payments to Counties). This is just one example of where the existing linkage between federal revenue sharing and timber harvest levels on federal lands has become an impediment to land use and policy changes that are in the public interest. Breaking this linkage and putting federal payments to counties on a land area basis will give the counties a more even and reliable source of income and will take local government out of the position of pressuring for unsustainably high timber harvest levels simply to maintain income based on a portion of the receipts. This existing approach has been a continuing restraint on the implementation of an integrated resource management approach on federal forest lands as specified in NFMA and FLPMA. An ecosystem-based approach to forest management requires an even higher level of integrated resource management. The formula for compensating local government for lost property taxes should not, need not, and cannot continue to be an obstacle to crucial changes in land and resource management on the federal lands.

For the purposes of the economic transition assistance plan for the Pacific Northwest forests affected by the need to protect old-growth habitat, land stewardship contracting can provide employment opportunities for woodworkers in and around their own communities with little or no retraining necessary. Forest management experts at the University of Washington and Oregon State University have identified a substantial need for reforestation, thinning and other silvicultural treatments that would produce a considerable volume of second-growth timber for Pacific Northwest mills and provide significant employment opportunity for workers whose jobs are threatened by the decline in old-growth timber harvesting.

Timber supply and employment effects of stewardship contract opportunities in the Pacific Northwest

Many public and private forests west of the Cascades contain an overabundance of established second-growth stands in need of actions such as thinning in order to grow to other

structures important for a diversity of habitats.⁸ In the absence of such actions neither managed nor preserved forest areas are likely to achieve biodiversity goals. Managed areas will primarily contain dense young stands that discourage both structural and species diversity. Geographically isolated preserved areas will contain primarily old-growth until major natural disturbances occur, after which the older structures will be lost for many years.⁹

The anticipated annual volume from thinning opportunities alone in western Oregon and western Washington is estimated at more than 3.6 billion board feet (BBF) per year. In Oregon alone, there are commercial thinning opportunities in stands 20–150 years old on public, corporate, and non-industrial private lands that could generate a merchantable volume of more than 3.2 BBF per year during the next ten years.¹⁰ This conservative estimate assumes that less than 60 percent of the stands that could be thinned would actually be thinned, and that 40 percent or less of the volume will actually be removed for processing into wood products. In Washington a similar conservative approach to estimating timber volumes from commercial thinning just in stands 10–30 years old suggests that nearly 430 million board feet per year would be available.¹¹

At the current estimate of 9.3 direct forest industry jobs per million board feet of timber harvested, this could mean continued employment for nearly 33,480 timber workers now threatened with layoffs. If indirect and induced employment is considered (an additional 5.7 jobs

⁸ Oliver, C. 1991. *Thinning and pruning 10–30 year old plantations in western Washington: Investment, social, wood supply, and environmental consequences*. Report to Governor's Timber Team, Timber Committee, State of Washington.

⁹ Oliver, C., Testimony before the House Committee on Agriculture, Subcommittee on Forests, Family Farms, and Energy, March 11, 1992.

¹⁰ Perry, D., Oregon State University, personal communication, May 3, 1993. These estimates are based on the International 1/4-inch log rule, which provides a more accurate conversion of cubic foot volume to board feet for smaller diameter logs. Estimates based on the Scribner log rule would be somewhat lower.

¹¹ Oliver, C., University of Washington, personal communication, May 4, 1993.

per MMBF), this could translate to a total of as many as 54,000 jobs in Pacific Northwest communities.

Financing stewardship contracts

Financing this work from current income to the federal land managing agencies can help minimize the impact of the economic transition assistance package on the federal budget deficit. Economic assistance will be needed by the people and communities of the Pacific Northwest during this period of transition to a sustainable regional economy, with a healthy, stable forest industry based on the management and utilization of second-growth forests. This assistance, generally discussed in terms of loan guarantees and vocational training, is both appropriate and necessary to moderate the effects of a major economic adjustment, particularly in rural communities. Such programs are likely to require significant federal outlays at a time when reducing the federal budget deficit is the foremost domestic policy priority of the Administration.

The inclusion of stewardship contracts as one component in an overall economic transition assistance plan can efficiently reach the most heavily affected individuals and communities with immediate employment opportunities with little or no direct federal outlay. The purchaser credit program, used by the Forest Service to obtain road construction and maintenance services on nearly every national forest in the country, provides one model for using timber receipts to offset the cost of stewardship activities. The needed construction services are specified as an integral part of a federal timber contract describing the volume and estimated value of the timber to be sold. On most national forests, these integrated contracts are then sold in an open competitive bidding process that assures the federal government of a fair market value for both the timber sold and the services received.

Resource management and ecological restoration services could be provided either directly by the contractor or by one of the many subcontractor firms, specializing in reforestation, thinning operations, stream habitat improvement or other activity, that are likely to spring up in response to new opportunities through stewardship contracting. Small and large timber purchaser

firms have already expressed an strong interest in bidding on stewardship contracts to perform an array of resource management and ecological restoration activities to be specified by the Forest Service. Stewardship contracts would be available and attractive to the very firms that face declining prospects due to old-growth habitat protection, primarily in historically timber-dependent, rural communities. The employment opportunities these contracts represent would require little or no immediate retraining of woodworkers, or relocation from their home communities.

Accomplishing needed resource management and ecological restoration work through stewardship contracts offers the prospect of significantly moderating the impact of old-growth habitat protection at relatively low cost, targeting the employment benefits to rural communities that need it most, when they need it, and using the existing skills of individuals most affected by the habitat protection decision. Stewardship contracts deserve careful consideration as one component of an overall economic transition assistance plan for the Pacific Northwest.

**Stewardship Contracting East of the Cascades
to Mitigate Timber Supply and Employment Effects
of Spotted Owl Habitat Protection**

In light of the reduced timber availability on the coastal Cascade public forests due to the controversy over management of the remaining old growth, the loss of jobs in the region, the high price of timber (even low-quality timber) throughout the west, and the need for forest treatment in the inland forests, a five-year transition strategy could contain one element that streamlined the process of instituting forest health projects in the inland forests, along with incentives for coastal-area workers and companies to undertake the work involved.

Background

The coniferous forests lying east of the Cascade spine, and in the Sierra region of California are, in many places, in serious need of effective management treatment. The forests are very diverse, so generalizations should be avoided, but many sites occupied by Ponderosa Pine, either alone or in combination with other conifers such as Western Larch, Douglas-fir, and the true firs, show significant stress due to improper species balance and overpopulation of trees per acre. Ecologists attribute this situation to a variety of causes, including removal of the high-value and largest trees in early logging, a wet period in the first part of the 20th Century that may have allowed moist-site species such as fir to invade sites normally more suited for pine and larch, and aggressive fire protection in the past half-century that kept small trees and fire-intolerant species from being "weeded out" of these forests.

As the trees have grown larger and more dense, a drought cycle in the past decade has exacerbated moisture and nutrient stress in overcrowded stands. Opportunistic insect and disease populations have soared, and large areas of dead and dying trees have resulted. In some stands, this timber holds significant economic value if harvested within 1–3 years after mortality;

thereafter the economic value drops off rapidly. Allowed to remain on site, this dead timber presents a huge fuel load which, if ignited, can result in uncontrollable wildfires that do major ecosystem damage because of the abnormally intense heats generated.

Where these forest areas burn, a new even-aged management cycle must begin again, often on soils and sites that have been degraded by the effects of intense fire. Where these stands can be treated while a fair component of trees still remain alive, it is possible to begin a new management system (now increasingly called ecosystem management) that focuses on ways to retain the forests in healthy, dynamic, diverse conditions. Such treatments will provide jobs, produce timber products, and restore forests to improved condition.

The needed treatment projects are not now being done, however. For example, the Northeastern Washington National Forest Health Report says that, "on the three national forests in northeastern Washington, about 2,980,000 acres are at risk of death from insects, disease and wildfire. Salvage and green timber sales, thinning and related activities, and reforestation programs deal with about 26,000 acres of susceptible lands annually under existing budgets." Obviously, this 100-year+ rotation is not going to meet the forest health needs of those forests.

One reason seems to be the lack of both programs and budgets within the agencies for effectively planning and implementing forest health-related treatments. The agencies rely heavily on timber sales, both salvage sales after mortality and green sales of merchantable logs, as their major silvicultural treatment device. This makes it difficult to plan and pay for the large amounts of work needed that are not directly related to the removal of merchantable timber, because there is no direct source of funds or program support to pay for such work. The emphasis on timber sales has also generated great public skepticism which makes it difficult for resource managers to propose other types of treatment without great public cynicism about it being a "clearcut in disguise." That skepticism, particularly as it has resulted in cumbersome planning, review, and timber sale processes, can extend the time and costs involved to the point where many projects are infeasible.

In particular, clearcutting as a timber harvest method meets with high public opposition. In some of these public forests, a significant amount of private timber has been clearcut in recent years, and much of the landscape has been significantly affected. Additional clearcutting on the interspersed public lands is both technically and politically questionable.

On some of the hardest-hit forest regions, such as the Blue Mountains of Eastern Oregon, intensive ecosystem evaluations have been done and forest restoration plans prepared. Those plans focus on restoring forest sites through a combination of practices designed specifically for each condition, including:

- * Removal of salvageable dead timber;
- * Thinning of green stands where needed;
- * Pruning of dead or lower limbs where needed to reduce the risk of ground fires climbing these "ladder fuels" into tree crowns, as well as to improve the ultimate quality of the wood produced;
- * Prescribed burning to reduce excessive fuels, break up large areas of wildfire-susceptible conditions, and create habitat diversity;
- * Removal or treatment of forest roads to reduce runoff, erosion, and sedimentation of streams, or to reduce human access into critical wildlife habitat or use patterns;
- * Restoration of ecosystem structure in riparian zones; and,
- * Tree planting in unregenerated or understocked stands.

Other public forest areas, such as eastern Washington and northern California, are currently undergoing similar study and plan preparation. Forests in Idaho have been most seriously affected at the southern, drier end of the state. On the Boise National Forest, for example, so much forest has been killed in recent years that all current timber sales are salvage of dead timber, and the workload is so extreme that it has not been possible to begin preventative work on stands that could be saved through effective treatment. Formal plans for treatment project needs have not been prepared on the Idaho forests, however.

Forest Health Projects Versus Timber Sales

A major factor in this policy proposal would be to replace, for a five-year test and transition period in the affected western forests, most or all of the normal timber sales with forest health treatment projects. These projects, while they could produce large amounts of merchantable timber, would be designed and implemented to achieve a more desirable forest condition, and to help managers facilitate the transition to ecosystem management on these sites.

A stewardship contracting approach, as described in the previous section, could be used to accomplish the necessary ecological restoration activities. The project plans would identify the forest treatment work needing to be done, and establish a bid basis to set fair market prices for carrying out the work. They would also estimate the type and amount of merchantable timber or other material likely to be produced during the treatment work, and establish a bid basis to set fair market prices for that material. A fair method of reimbursement, such as is currently used for purchaser-credit road building in timber sales, should be established which assures fair and equitable treatment for both the government and the contractor.

To remove the "spike" that these sales would put into payments to some counties during this transition period, payments to the states and counties should be stabilized for the transition period by taking a rolling average of the past 10 years of payments to each county, normalized for inflation, and making that the annual payment for the transition period, regardless of volume removed.

The contracts to implement these projects will almost certainly need to be multi-year in length, with final approval and payment to the contractor based on achievement of the end results agreed to in the stewardship contract. As opposed to straight sale of timber, these projects should be heavily based on effective performance. Many tasks, such as prescribed burning, depend on weather conditions that may or may not be available in a given year. Others, such as tree planting or riparian area restoration, may take 2-3 seasons to judge whether or not they have succeeded. Where it is in the contractor's financial interest for the project to succeed, as opposed

to simply "doing the work," it creates a significant difference in the type of performance, as well as the oversight costs of the administering agency.

Implementing the Policy

An Administration proposal for a five-year program should include the following elements:

- * Immediate funding to accelerate implementation of the Blue Mountains Restoration Project;
- * Start-up funding to begin implementation of the Eastern Washington and Sierra Forest Restoration Projects when plans have been completed and approved;
- * Funding to begin a forest health study and restoration proposal for Idaho public forests, with an intense public participation process similar to the Blue Mountains Restoration Study;
- * Streamlining the planning and implementation process by directing the agencies to prepare NEPA documents and carry out public participation processes with plans developed in sufficient detail at the landscape or ecosystem level to illustrate the end-results objectives desired in each affected ecosystem, then allowing project-level implementation of approved plans to proceed without further NEPA review or appeal;
- * Approval for all national forests in Washington, Oregon, California, and Idaho to utilize the multi-year stewardship contracting authority granted to 5 pilot forests in the FY93 appropriations bill for the Forest Service; and,
- * Pooling and dedication of all federal timber and salvage sale revenues in the affected region into support for the planning and implementation of forest health treatment projects on both NFS and BLM forest lands for the 5-year transition and test period.

In preparing plans for forest health treatment projects, federal land managers should be instructed to:

- * Place first priority on areas that need treatment which are located near population centers, which have road access, and where treatment can be less controversial, more quickly started, and more likely to help prevent disastrous impacts from wildfires or floods.
- * Utilize private consultants where needed to supplement agency technicians and accelerate the process of carrying out stand assessments and the development of treatment plans;
- * Develop monitoring plans that begin with, go through, and follow up each treatment project to provide information on the effectiveness of projects in reaching the end results sought; and
- * Utilize local organizations, non-profits, universities, or private consultants where appropriate in the monitoring program, both to gain the necessary staff and to broaden the public understanding and trust of the process.

Potential Impacts

1. The Blue Mountains Restoration Strategy

Implementation of the three-year strategy would result in, among other treatments:

Prescribed burning	355,000 acres
Biomass Removal	6,050 acres
Harvest	180,000 acres
Reforestation	90,000 acres
Estimated timber harvest:	200–267 million board feet per year
Estimated employment impact:	1,940–2,587 direct jobs 1,060–1,413 indirect jobs
Estimated costs:	\$247 million
Estimated returns:	\$100–200 million (These returns may be low, in light of current economic conditions. See below.)
Annual savings (wildfire suppression)	\$4.3 million/year (for 20 years)

2. The Northeastern Washington Restoration Strategy

Implementation of the forest health projects called for in the February, 1993, report would result in, among other treatments:

Prescribed burning	368,000 acres
Tree Density and Growth Management	65,346 acres
Harvest	110,750 acres
Reforestation	44,696 acres
Estimated timber harvest:	295 million board feet per year
Estimated employment impact:	2,865 direct jobs 1,565 indirect jobs
Income:	\$829 million (over 3 years) (See below.)
Annual savings (wildfire suppression):	\$1.7 million/year (for 20 years)

Short-term Economic Opportunity

The northwest timber market has been significantly impacted by market forces, including the reduction in old-growth timber harvest due to court injunctions, the export of logs, and the recovery in the housing market. Without entering the argument over why the current prices are high, or trying to predict how long such prices can last, it is evident that a short-term opportunity exists. That can be judged by looking at the Boise National Forest timber sales record for the past few months.

The Boise National Forest was hit by a large wildfire in the late summer of 1992. A major salvage sale program already under way due to huge areas of insect-, drought- and fire-killed forests was expanded to salvage as much merchantable timber as possible from the Foothills disaster. The resulting sales in FY 1993 have set new records for timber prices on the forest, with Ponderosa Pine going for \$622/thousand board feet in one sale. To date, the Boise has sold 139 million board feet for \$48,765,753, an average of \$350.56/thousand board feet across all species and grades. This represented almost a doubling of the timber staff's appraisal,

which totalled \$27.6 million for these timber values.

While the high prices received on these sales may be due in part to the Forest's alacrity in getting fire-killed timber onto the market before its value declined through decay, it must also be considered that the timber economy on the west coast played a major role. Several Oregon firms travelled to Boise to bid on these sales and, for the first time in history, two Oregon firms were successful bidders. Clearly, the effects of the Pacific Coast old-growth transition are being felt 400 miles or more inland.

While the high prices and demands for inland-west timber have been decried by some as "moving the problem to the east side," many see it as a major boon for forest management. To sell fire-killed, otherwise dead, or stressed timber at a price which can help offset the costs of needed forest improvements is an economic boon seldom, if ever, experienced by forest managers in this region. With no way to predict how long this level of demand and price will last, it seems only sensible to do everything possible to accelerate the execution of needed forest health improvement projects while the market is strong. In so doing, forests can be improved, jobs created, and economic health improved simultaneously.

For the forest-industry families and businesses on the western slope of the Cascades, a relocation to work in the forest health projects of the inland west may be traumatic and difficult. It seems less traumatic, however, than the total loss of economic opportunity, or the need to re-train into totally different areas of work. After the west-side old growth harvests have been proscribed, and the west-side second-growth opportunities captured, the inland forest health opportunities may provide an essential economic opportunity for many families and businesses. Capturing that opportunity through an intensive 5-year program of facilitating forest health project planning and implementation on federal forests of the region seems a very low-cost, high-payback policy option.

Compensating for impacts on federal payments to counties

As timber harvests on the west side of the Cascades in Oregon and Washington decline, so too will the federal revenue sharing with states and counties, currently calculated as a portion of federal timber receipts. In some counties in western Oregon, these revenue-sharing payments constitute more than two-thirds of the annual budget, and a sudden loss of this income would put county governments in dire financial straits, just at the time when local social services are in greatest demand. Any federal plan for easing the major economic transition taking place in timber-dependent communities in the Pacific Northwest must address the need of county governments for an adequate and reliable income from federal payments-in-lieu-of-taxes during this period.

One option that should be considered in the Administration's economic transition plan for the Pacific Northwest "owl region" is changing the formula by which the payments are determined from one based on a portion of timber receipts to one based on the area of non-taxable federal land in the county and the tax revenue it would generate in private ownership, regardless of the current or planned allocation and use of the federal land and resources. This could be accomplished gradually over a five-year transition period to minimize fluctuations or disruptions in this heavily relied upon source of local government income.

Background

Both the Forest Service and BLM pay a portion of their timber sale receipts to counties in which federal forest lands are located to compensate for the loss of property taxes that would be levied were these lands privately owned. Since 1908, the Forest Service has been paying 25

percent of receipts.¹² Later amendments made sure that the counties also received 25 percent of deposits, such as those made under the Knudson–Vandenberg Act, and of payments–in–kind, such as the value of roads constructed by timber purchasers. BLM returns 50 percent of receipts to counties in western Oregon where the O&C lands are located.

Congress added a payments–in–lieu–of–taxes program in 1976 to reimburse local governments for taxes on federal lands that produce few or no revenues. This law provides that local governments get the higher of seventy–five cents per acre reduced by revenue sharing payments, subject to a cap based on population, or a flat ten cents per acre. This means that national forest counties receive up to seventy–five cents per acre in addition to the regular 25 percent share of timber sales and other revenues.¹³

These payments are a significant source of income to western Oregon and western Washington counties. In 1991, a total of \$178 million was paid to local government in Oregon and Washington, the vast majority of it to counties west of the Cascades. In some rural counties, such as Douglas county in southwestern Oregon, these payments constitute two–thirds of the entire county budget.

A number of serious drawbacks have been recognized with this approach to determining federal payments to counties, including problems of distributional equity and obstacles to the sustainable management of forest ecosystems. More than two decades ago, the Public Land Law Review Commission determined that the pattern for sharing federal receipts with local government bears little relationship to the burdens imposed on them by the immunity of federal lands from taxation. In areas with high timber values, the federal government pays counties significantly more than they would receive if the lands were in private ownership. Conversely, federal lands with low timber values return significantly less to counties than they would in

¹² 16 U.S.C. 500.

¹³ Hagenstein, P., personal communication, March 15, 1993.

private ownership. This is illustrated in Table 1 with examples from the Willamette National Forest (Oregon), the Talladega (Alabama), and the White Mountain (New Hampshire) comparing the current payment structure with what tax revenues would be if the lands were in private ownership.

Table 1. Comparison of payments to counties from four national forests under the current formula against estimated tax revenue were these lands in private ownership

National Forest	Average receipt per acre	Payments per acre:			Local taxes per acre:			
		25% Fund	PILT	Total	Yield tax %	Amount	Land	Total
Willamette	119.80	29.95	.10	30.05	6.5	7.79	1.00	8.79
Talladega	8.80	2.20	.10	2.30	8.0	.70	1.00	1.70
White Mountain	3.00	.75	.10	.85	10.0	.30	1.00	1.30

Even within western Oregon alone there are significant distributional inequities in federal revenue sharing. On the Coos Bay Wagon Road lands, an area administered by BLM, the federal government has paid an average of less than \$6 per acre over the past ten years, based on an equivalency to private property tax and timber severance tax. During the same period, the Forest Service paid counties an average of about \$20 per acre of national forest land, and BLM paid more than \$40 per acre on the O&C lands.

This linkage between timber receipts and county payments has placed local governments in the position of pressing Congressional representatives to set annual federal timber sale targets at the highest possible level in order to maintain the level of federal payments and to minimize fluctuations in this income from one year to the next.¹⁴ Timber sale targets established in

¹⁴ Sample, V.A., "What's Really Driving National Forest Management," *American Forests*, January/February, 1989.

annual appropriations for the Forest Service and BLM have often exceeded those requested by the agencies themselves. In many cases, local governments are placed in a position of advocating for the short term what might be against the region's interests in the longer run. Local economies, like a portfolio of investments, are more stable and productive when they are based on a wide diversity of activities rather than just a few. This is especially true if one of the major local industries is inherently cyclical, highly sensitive to fluctuating interest rates, or locally on the decline.

Local governments west of the Cascades have recognized this, but have been unwilling to risk a drop in income from shifting to a different basis for payments-in-lieu-of-taxes. Indications have been clear for some time that the PNW would experience a major decline in timber supply beginning in the early 1990s. Economic studies as long ago as 1963 predicted a depletion of the region's old-growth timber volume during the 1990s, with significantly lower timber harvests for several subsequent decades until the youngest of the second growth timber reached merchantable size.¹⁵ The land and resource management plans developed for each national forest following the passage of the National Forest Management Act in 1976 called for a one-quarter reduction in allowable harvest levels from the 1980s to the year 2000. Various habitat conservation plans for the northern spotted owl have called for further reductions in the volume harvested from federal forest lands.

With federal timber sales almost certain to fall sharply from recent levels and remain relatively low for several decades, it is time to reevaluate the current approach. The counties affected by habitat conservation plans for the northern spotted owl are under a temporary legislative arrangement which maintains payments at average for 1986-1990, a period of both high timber harvest levels and high timber prices. The current arrangement expires at the end of FY 1995, however, and a longer term solution will be needed.

¹⁵ See Sample, V. and Le Master, D., *Assessing the Employment Impacts of Protecting Habitat for the Northern Spotted Owl* (Washington, DC: American Forestry Association, 1992).

Determining federal payments to counties on the basis of land area

The economic transition plan for the Pacific Northwest should include a provision for maintaining federal payments to the affected counties at no less than a ten-year rolling average, county by county, during the next five years, after which payments would be based on the area of national forest land in the county and equivalent to what would be expected if the lands were in private ownership.

A rolling ten-year average would extend the basis for calculation back to the mid-1980s, a period of record high federal timber harvests and receipts. During the five-year economic transition period, this would maintain payments to counties at a significantly higher level than could be expected under either the existing timber receipts formula or a formula based on private tax equivalency. In addition, the level of payments would become far more stable and predictable (Figure 1 and Appendix A), simplifying local government budgeting and facilitating better long-term planning for capital investments in schools, roads, and other local public works projects. Any significant change in payments associated with the shift to a tax equivalency basis would take place gradually, providing time for adjustment in local government budgeting and providing substantial additional income to the counties during the economic transition. The rolling average would be calculated on a county-by-county basis.

At the end of the five-year economic transition period, the formula for determining federal payments-in-lieu-of-taxes would revert to an equivalent to the combination of property and timber severance taxes levied on private forest landowners in the county. A precedent for this approach exists on BLM's Coos Bay Wagon Road (CBWR) lands in southwestern Oregon. The assessed value of forest land for property tax is a function of the price of second-growth Douglas-fir stumpage over the previous three-year period. Severance tax is 6.5 percent of the value of the timber harvested. Between 1984 and 1988, the CBWR lands in Roseburg County,

Oregon yielded \$59,935 in severance tax and \$18,321 in property tax annually for 13,924 acres.¹⁶

Since perhaps a third of the payment is based on federal land acreage in the county, independent of the land allocation or resource use, such an approach could be expected to significantly reduce the pressure on federal forest managers to keep timber harvests high simply to maintain steady payments to local government. However, if the severance tax component is perceived as based on the amount of timber harvested the difficulties associated with the linkage between federal timber harvest levels and federal revenue sharing may not be eliminated.

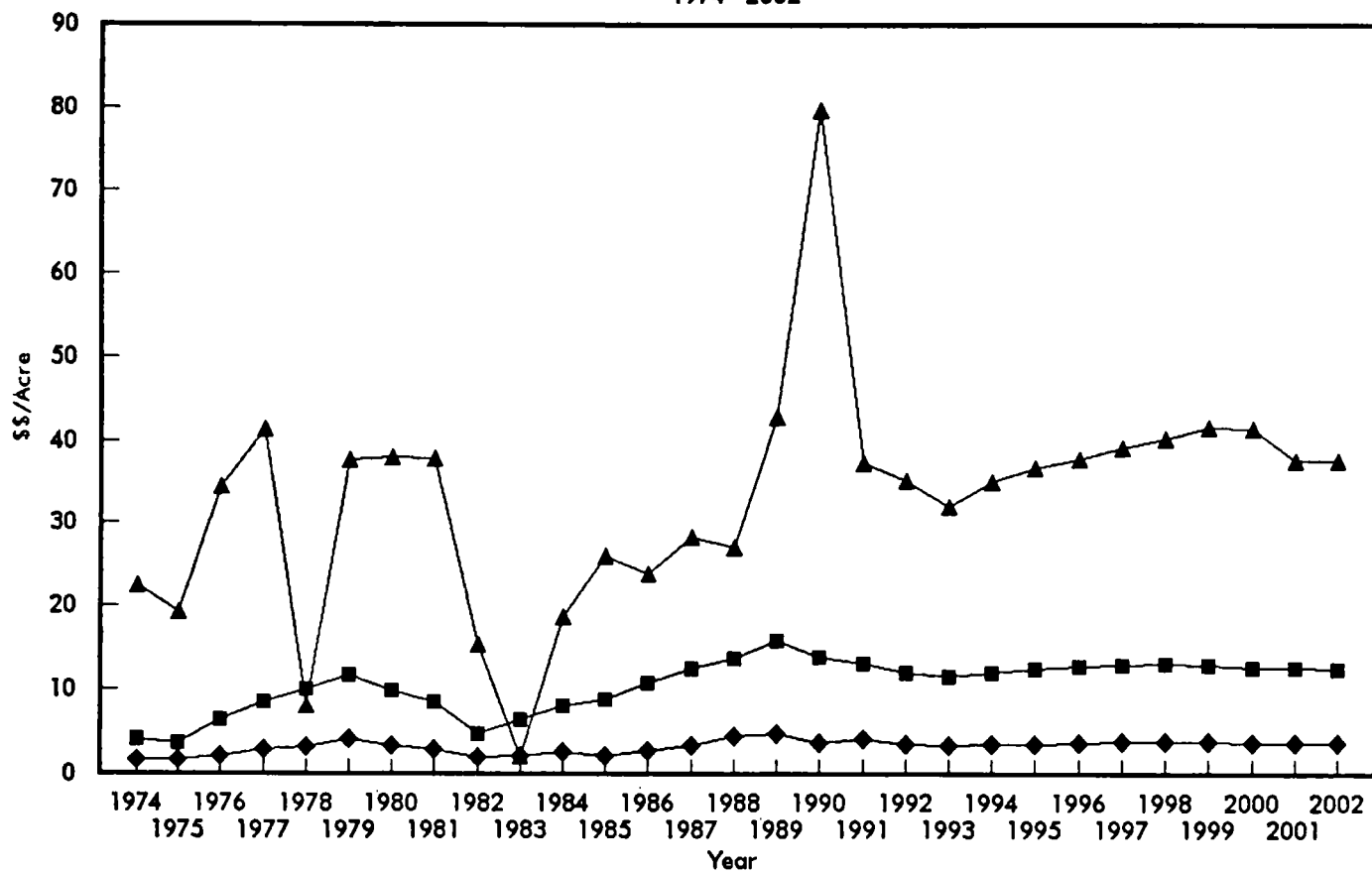
One alternative approach is a strict per acre payment, at a rate mutually agreed upon by the federal agency and county government involved, and renegotiated on a five year basis. If care is not exercised, this approach could have a tendency to be applied like an *ad valorem* tax. *Ad valorem* taxes have been replaced with severance taxes in many states precisely because they were seen as forcing forest landowners to harvest timber prematurely. Because timber growth increased property value over time, the *ad valorem* tax creeps upward as well, with no current income to the landowner to offset the increases tax. The response of private landowners has been to harvest the timber as soon as possible to gain income to offset the taxes and to reduce property value. If this sort of approach were taken on federal forest lands, whether intentionally or not, it could bring a different sort of pressure to harvest, and could interfere with federal agencies' attempts to adopt long-rotation management strategies consistent with providing more late-successional forest habitat.

Legislative direction to adopt a land area basis for the calculation of payments-in-lieu-of-taxes would have to provide that the value of standing timber not be a component in the calculation, the value of these intact forest ecosystems accruing to the local government and citizens in other ways, including watershed protection, fish and wildlife habitat, and opportunities

¹⁶ *Draft Resource Management Plan for the Roseburg District* (Portland, OR: Bureau of Land Management, 1992)

for recreation and tourism. One possibility that deserves further discussion and analysis is to calculate federal payments on the equivalent of a land tax based on current use valuation. Current use valuation has been used successfully by many state and local governments to reduce the pressure on private landowners to shift land use toward development in order to escape a growing tax burden. It has been useful in allowing owners to manage forest lands for conservation purposes, including long-rotation management aimed at watershed protection and habitat for wildlife needing late-successional forest ecosystems. Payments should be consistent with current use valuation assessments used on private lands in the county.

Figure 1 — Payments to Counties/Acre in Owl Region of OR & WA
1974–2002



—■— OR Forest Service —◆— WA Forest Service —▲— BLM O&C

1993–2002 calculated by 10-yr. avg. of previous decade

Private Land Relationships in Forest Ecosystem Management

To resolve the current controversies over endangered-species habitat protection, and to avoid such acute ecological and socioeconomic difficulties in the future, we must look beyond the traditional single-species approach to biodiversity conservation and begin focusing on the sustainable management of forest ecosystems. In most regions of the United States, including the Pacific Northwest, the delineation of ecologically important, landscape-scale ecosystems encompasses both public and private lands, often interspersed with one another. An effective forest ecosystem management strategy for the Pacific Northwest will recognize the important role that private lands can play in complementing and supplementing ecosystem management on adjacent public forest lands, but it must also recognize and accommodate the appropriate economic and other goals and objectives on private lands.

Public forest lands constitute only a small portion of the total forest land base, and are not sufficient in themselves to adequately protect biodiversity in forest ecosystems. Nationally, federal and state lands constitute about 20 percent of the total forest land base. Of the remaining 80 percent that is privately held, 20 percent is industrial forest land and the remaining 60 percent is held by non-industrial private owners, such as farmers. In Oregon and Washington, 43 percent of the forest land is privately owned, 25 percent by corporations and 18 percent by non-industrial private owners.¹⁷ Even in the Pacific Northwest, where ownerships tend to be larger and more contiguous than in many regions of the country, the delineation of ecosystems along watershed or other ecological boundaries will nearly always encompass an intermingled mixture of public

¹⁷ Wadell, K, D. Oswald, and D. Powell, *Forest Statistics for the United States, 1987*, Resource Bulletin PNW-RB-168 (Portland, OR: USDA Forest Service, Pacific Northwest Research Station, 1989).

and private forest lands. This intermingling, combined with the fact that the vast majority of forest land is in private ownership, means that private lands have a critical role to play in any ecosystem-based strategy to protect biological diversity, water quality, and many other natural values, whether just for the Pacific Northwest "owl region" or for the United States as a whole.

Private forest landowners have a variety of different goals, usually including economic objectives. Often there are opportunities for private owners to better understand and protect biodiversity values without materially interfering with their primary economic objectives for owning and managing their forest land. Private timberlands have unique roles and responsibilities, distinct from public forests. Appropriate economic objectives, such as profitably growing and producing timber on a commercial basis, are pursued while fulfilling environmental obligations described in both federal and state laws and regulations.

As the importance of protecting biological diversity in temperate U.S. forest ecosystems has become evident, many companies have voluntarily sought the advice of ecologists and other scientists to better understand and protect biodiversity values on private lands. During 1992, more than 50 private corporations, including several of the largest forest products companies in the United States, submitted biodiversity conservation proposals for endorsement by the President's Commission on Environmental Quality (PCEQ).¹⁸ The proposals were reviewed by a task force on biodiversity on private lands, measured against exacting criteria, and many of them approved. As company officials came to better understand what biodiversity values existed on their lands, many found that a great deal could be done to protect these values without materially interfering with the primary economic objectives for owning and managing the land. These efforts, supported entirely by the companies' own funds, are continuing today in many parts of the country.

¹⁸ *Report of the President's Commission on Environmental Quality* (Washington, DC: Council on Environmental Quality, 1993).

But private forest landowners are also recognizing the importance of coordination across ownership boundaries, with adjacent public as well as private landowners, to an integrated ecosystem-based approach to forest management. It is in everyone's interest to move beyond the current species-by-species approach to biodiversity conservation--resolving the spotted owl controversy will mean little if the failure to protect habitat at the ecosystem level results in a continuation of endangered species listings.

Representatives of forest products companies in the Pacific Northwest have stated their commitment to ecosystem management on public forest lands.¹⁹ There are opportunities for adjacent private lands to complement and supplement the achievement of ecosystem management on public forest lands through new approaches that deal collectively with groups of species and habitats. Private landowners have identified a number of actions they believe clarify the appropriate role of private forest lands in managing the forest ecosystems of the Pacific Northwest:

Protecting riparian areas and wetlands

Private forest landowners have the responsibility for managing riparian areas and wetlands to provide for water quality, fish habitat, and associated wildlife values. Management objectives may include: provision of shade and large organic debris for streams, increasing the conifer component on riparian areas, assessing and monitoring the effectiveness of current regulations, and cooperating with adjacent landowners to achieve desired riparian conditions.

Providing habitat for early and mid-successional species

Private forest landowners will provide habitat for early successional species in conjunction with their primary operation goal of sustainable timber production. In addition, through silvicultural treatments designed to create and retain structures (large trees, snags, and

¹⁹ Statement of Jim Geisinger, President, Northwest Forestry Association to the President's Forest Conference, Portland, Oregon, April 2, 1993.

down logs) and diverse vegetative conditions, they will provide for many mid-successional species (those that depend on the above structures) and some late-successional species (those that require structural attributes or features of old forest stands).

Assisting public land managers in meeting their responsibilities for late successional ecosystems.

While the protection of late-successional ecosystems and species is primarily the responsibility of public land managers, it is appropriate and desirable for private forest landowners to cooperate, where practical, in meeting these objectives. For example, private landowners might complement public obligations by providing owl dispersal habitat, participating in land trades or sales critical to conservation programs, and working within incentive and/or compensation programs that encourage protection of late-successional species.

Maintaining site productivity.

Private forest landowners will maintain the basic productive capacity of their lands, with particular reference to soil properties. This may be accomplished through such measures as minimizing soil disturbance and compaction, improving road construction and maintenance, and identifying and protecting fragile soils.²⁰

However, private forest landowners currently face some substantial disincentives for participating in a cooperative approach to forest ecosystem management.

- * Log shortages from reduced federal timber sales and price escalation have encouraged premature harvest, particularly on small non-industrial holdings.

²⁰ Smith, Gordon and Kohm, Katherine, *The Role of Industrial Forestlands in the Management of Western Washington's Forest Ecosystems*. Discussion Paper. (Seattle, WA: Olympic Natural Resources Center, University of Washington, 1993).

- * Uncertainty in both federal and state forest regulation has discouraged holding forest lands for long-term forestry purposes.
- * Forest improvements are often being deferred for fear that investment returns will not be realized due to future harvest restrictions.
- * Productive forest lands are being converted to other land uses due to urban encroachment which may limit its ultimate use.
- * Coordination across landscapes among corporate private forest landowners may be viewed as antitrust violations.
- * The 1990 Farm Bill offers valuable incentives to non-industrial private landowners for stewardship practices, but uneven application by the states under individual state forest practices acts has penalized private owners and resulted in assistance being denied.

Change is essential if we are to achieve harmonious protection and sustainable management of our forest ecosystems. Continuing to focus on the stand level, single species and jurisdiction in isolation can only intensify the crisis. It is time to look at broad ecosystems in a collaborative approach with all forest landowners. By restoring and maintaining biological diversity on a broad ecosystem basis, it is possible to achieve harmonious environmental protection and sustainable use of our forest resources. Among the specific policy opportunities for accomplishing this:

1. Develop a multi-agency/party Regional Strategy for Biodiversity and Ecosystem Management based on the bioregion (OR, WA and Northern CA), landscape/watershed, and stand levels. Parties should be the three states and their applicable agencies and the affected Federal agencies with private landowners participating as signatories or associates.
2. Develop non-regulatory approaches to facilitate the coordination across jurisdictional boundaries in inventory, monitoring, planning and management decision making. These

might include programs to encourage private voluntary efforts and the development of market-based economic incentives. Consider changes in federal financial and tax incentives. Coordinated Resource Management Plans (CRMP), such as Ecosystem Management Agreements, could be developed jointly among landowners within an ecosystem planning area to coordinate management strategies and action plans. Incentives could be built in where landowner objectives are compromised.

3. Adopt funding reform for Federal forestry investments. Include incentives on private land for public values not reflected in the market place. Public forests should be funded on a stewardship basis with product flows a result.
4. Facilitate the development and application of collaborative decision making and information gathering (remote sensing and GIS). This process is best articulated in the recent report of the Blue Ribbon Panel on Forest Inventory and Analysis.²¹
5. Avoid prescriptive legislation. Clearly articulate principles, goals, and objectives, then create a policy and regulatory environment conducive to the development of innovative local solutions to local situations.
6. Respect the goals and objectives of individual landowners. Production on non-market values by private landowners should be voluntary, encourage and facilitated by incentive or compensation, not by regulation.
7. Strengthen the capability and commitment of private, public and academic institutions to the development of a more complete knowledge base to guide the task of understanding and implementing ecosystem management.

²¹ *Report of the Blue Ribbon Panel on Forest Inventory and Analysis* (Washington, DC: American Forest and Paper Association, 1992).

8. **Build community and public support through education and participation in decision making.** Human communities, local economies and private property are important considerations along with healthy and sustainable ecosystems.

Private forest lands can and must play an important role in any overall strategy to protect and sustainably manage habitat for the northern spotted owl and other late-successional forest species in the Pacific Northwest and throughout the country. There is a new understanding and a new willingness among private forest landowners to play a complementary and supplemental supporting role to the protection of biological diversity and other ecological values on adjacent public lands. Currently there are a number of important disincentives for closer cooperation among adjacent public and private forest landowners. It is important to identify these disincentives and eliminate them to the extent possible while not undercutting the economic purposes for which private organizations and individuals own and manage their forest land.

**Interactive Use of GIS Technology
to Prioritize Late-Successional Forests of
Greatest Ecological Value**

Though all the remaining areas of old-growth forest in the Pacific Northwest are important, not all are of *equal* importance to the survival of the northern spotted owl and associated species characteristic of late-successional forest ecosystems. In the event that the political compromise that is reached in this issue calls for some level of continued harvesting in old-growth forests during an economic transition period, it is only prudent to be prepared with the best available scientific information showing which of these areas is most critical, and which areas harvesting should be directed towards if harvesting is to take place. Recent rapid advances in remote-sensing and geographic information (GIS) technology have made possible the development of better ecological information on the extent, location, and nature of PNW old-growth forests than has ever been available before. The detailed ecological information, in combination with the technological capability to analyze it and display it according to a variety of different ecological criteria, afford a powerful tool for prioritizing the remaining old-growth to ensure that the most valuable areas are known.

Background

What remains of the old-growth forest in the Pacific Northwest is but a fraction of what it was only a century ago. As our understanding of the ecological functioning of these forests improves, it is becoming increasingly clear how important they are to the viability of late-successional forest species including--but not limited to--the northern spotted owl.

The most comprehensive and authoritative prioritization of Pacific Northwest old-growth was conducted by the Scientific Panel on Late-Successional Forest Ecosystems (the "Gang of

Four"). With the help of a host of scientists and resource managers, the Scientific Panel took the latest available maps of "potential old-growth" prepared from LandsatTM satellite photos and hand-drew boundaries delineating the "most ecologically significant" (LS/OG1) from the "ecologically significant" (LS/OG2), and the "remainder" (LS/OG3).

The mapping focused on larger aggregations of late-successional forest stands suitable as management units for old-growth reserves rather than small individual patches. This means that some areas of younger forest and cutover areas are included in areas mapped as late-successional forest.²² It was assumed that young stands within the old-growth reserves would eventually mature and fill in these openings. On the other hand, this approach left many small sections of old-growth outside the boundaries of the proposed reserves and thus not recommended for protection under the interim plan. Collectively, these small sections represent thousands of acres of old-growth. It should also be noted that the mapping was done "to support the development of *interim* proposals for reserves which would maintain options for a longer term solution." It was thus a conservative estimate that may hold additional flexibility upon closer analysis. Since the release of the Scientific Panel's report in October 1991, much additional work has gone into the maps to assure better mapping precision and to check maps against conditions on the ground.

GIS for landscape-scale ecosystem analysis and consensus-building

In the development of the Administration's proposal for protecting late-successional and old-growth habitat for the spotted owl and other species, it will be important for ecologists, resource managers, policymakers, and concerned citizens to be able to determine the effects of imposing certain ecological or economic criteria, and to propose new alternatives as other opportunities become evident.

²² Johnson, K.N., J.F. Franklin, J.W. Thomas, and J. Gordon, *Alternatives for Management of Late-Successional Forests of the Pacific Northwest*, The Report of the Scientific Panel on Late-Successional Forest Ecosystems, October 8, 1991, p. 2.

For example, the total acreage mapped as old-growth is only part of what needs to be evaluated. It is critically important that the ecological condition of these stands be known as well. Reserves proposed in land and resource management plans prepared by the Forest Service and BLM were often in small or narrow blocks which, though they might serve other environmental or aesthetic needs, did not effectively maintain old-growth ecological characteristics and conditions. The relationship of federal forests to forests on adjacent state and private lands will influence the effectiveness of the federal forest lands as late-successional habitat. The age and structure of adjacent non-federal forests, now and in the foreseeable future, will have a major effect on whether areas of federal forest should be classified as top priority for reserves.

Recent advances in remote-sensing/GIS technology, and improved documentation of the ecological data for Pacific Northwest forests, provide a tool with which key scientists and decision makers can interact with one another in "real time" to test assumptions, explore new alternatives, and perhaps arrive at a solution that was not evident before. The map of remaining areas of old-growth, and their priorities relative to one another, can change drastically depending on the ecological assumptions imposed, such as buffer width and minimum critical habitat size. Environmental conditions along the edges of old-growth areas surrounded by cutover lands may be significantly altered several hundred feet into the old-growth stand, meaning that unmodified interior forest conditions exist only in a "core area" substantially smaller than the total area of old-growth. In some cases, the total area of old-growth may meet the minimum critical habitat size, but fail to do so when this "edge effect" is taken into account.

An example of the kind of interactive analysis that can be done in "real time" is the testing of various assumptions concerning the minimum width of buffers that consider this edge effect. Old-growth areas that are fairly contiguous and well connected assuming a 200-foot buffer may show up as small islands incapable of supporting viable populations when it is assumed that a 300-foot buffer is needed.

In searching for an optimal compromise between what is ecologically possible and what is economically, socially, and politically possible a great deal of give and take will occur. This can be done with the key interests together and interacting with one another, with old-growth maps being redrawn on a screen before them to show the effect of each new proposal or assumption.

In order to utilize this new tool effectively, it will be necessary to get all of the information in place and clearly define the major alternatives.

- * The players will need to specify the variables of interest, such as: What are the current conditions and what impacts need to be measured over what time period? What constraints should be placed on the landscape?
- * Alternatives must be specified, and the range of alternatives must be significant if the analysis is to have any meaning?
- * Data layers must already be prepared showing key criteria for analysis of the alternatives: ownership, administrative boundaries, slope, aspect, elevation, hydrology, historical vegetation, and fragmentation, to name a few.
- * The next step is to work with decision makers to interactively build models which simulate change (from present conditions) over time under different alternatives.
- * The final step is to connect changes in the landscape to changes in habitat and to changes in the economy. This will provide the primary basis for analysis of the tradeoffs among the alternatives.

This approach to analysis is critical to finding a solution that maximizes the probability of long-term viable populations of late-successional forest species while minimizing the negative

impacts on timber-dependent communities and the regional economy of the Pacific Northwest. The politics will still not be easy, but it is entirely plausible that the effective utilization of GIS technology and the best available data on the ecological classification of Pacific Northwest forests in a setting that allows open and direct interaction among the major stakeholders may uncover alternatives that are as yet unknown and untried. And one of those alternatives may be something very close to the optimal compromise that all are seeking. This should be an explicit component of the Administration's plan, and sufficient funds and other resources should be made available to ensure its success.

Elimination of Log Export Subsidies: Effects on Timber Supply and Employment

The export of unprocessed logs from the Pacific Northwest is currently subsidized by the federal government through an income tax break of as much as 15 percent on the profits from exports through approved Foreign Sales Corporations. Elimination of this subsidy could change the economics of decisions by log sellers, resulting in a substantial portion of these log exports being routed to the domestic market and helping to alleviate the current timber supply shortage in western Oregon and western Washington. Current price trends suggest that this change in federal tax policy could bring at least 250 million board feet of logs back into the PNW regional economy, maintaining at least 1,000 jobs in the forest products and related industries.

Background

To encourage the export of American goods and services, the U.S. federal tax code provides for a reduced income tax rate on profits from export sales to wholly-owned foreign subsidiaries of American companies, known as Foreign Sales Corporations (FSCs).²³ In December 1984, the FSC replaced the Domestic International Sales Corporation (DISC) as the U.S. Government's primary tax incentive for U.S. exports. Congress passed the FSC legislation in response to objections raised by some of our foreign trading partners that the DISC rules created an illegal export subsidy under the General Agreement on Tariffs and Trade (GATT). The tax incentive provided by the FSC legislation is in the form of a permanent exemption from

²³ Taxation on Foreign Sales Corporations, 26 U.S.C. §§ 991–996 (1988).

federal income tax for up to 15 percent of the gross income from exports.²⁴ An exemption of 15 percent of gross income is equivalent to a reduction in the corporate income tax rate from 35 percent to slightly less than 29 percent.

The question of log exports has loomed large in the debate over how to mitigate the impact of preserving old-growth forest habitat on timber-dependent communities. Until recently, more than 3 billion board feet (BBF) of unprocessed logs were exported annually from Oregon and Washington, mostly to Japan, China, and Korea.²⁵ The tightening of laws prohibiting the export of logs from federal lands and new restrictions on the export of logs from state lands have reduced this to approximately 2.2 BBF in 1992.²⁶ To many, prohibiting the export of these basic raw material resources has seemed like the natural solution to several problems. It would route a major source of timber supply back to domestic mills, offsetting at least some portion of the impact of old-growth set-asides. It would employ American workers in the processing of valued-added goods for export, improving the balance of trade with our Asian trading partners.²⁷

But a blanket prohibition of log exports from private lands also raises a host of complex economic and legal questions, not the least of which relate to restraint of trade and the attenuation of private property rights. Eliminating the FSC subsidy for the export of unprocessed logs only (i.e., not affecting exports of lumber, paper, or other wood products) avoids many of

²⁴ Goldstein, M. and Aronoff, A., *Foreign Sales Corporations Tax Incentive for U.S. Exporters* (Washington, DC: U.S. Department of Commerce, 1988).

²⁵ Warren, D., *Production, Prices, Employment and Trade in Northwest Forest Industries* (Portland, OR: USDA Forest Service, Pacific Northwest Research Station, 1993).

²⁶ A recent decision by the U.S. Ninth Circuit Court of Appeals found that the federal restriction of log exports by state government is a violation of states' rights, so exports from state lands can be expected to increase from current levels. See: *Board of Natural Resources of the State of Washington, et al. v. Brown*, U.S. Court of Appeals, 9th Cir., May 4, 1993.

²⁷ Letter from the Honorable Peter A. DeFazio to President George Bush, April 12, 1989.

these issues. It does not restrain private log sellers from selling to whoever offers the highest price; it merely eliminates the additional financial incentive, currently estimated to cost taxpayers approximately \$100 million annually,²⁸ that induces private owners to sell their logs to foreign purchasers rather than to their neighbors.

Impact of log export subsidies on domestic timber purchasers

Under the current system, federal tax policy encourages a log seller to sell to the export market even if domestic mills are willing to offer the same price as foreign buyers. A 5 percent reduction in the corporate income tax rate for profits on exported logs, i.e., from 34 percent to 29 percent, means that a domestic purchaser would have to offer the seller a price more than 7.5 percent higher than the foreign buyer for the seller to be indifferent between the two.

In 1992, the average price for softwood sawlogs exported to China was approximately \$500 per thousand board feet (MBF).²⁹ With the FSC subsidy, the after-tax profit to the log seller would be about \$355/MBF. For the log seller to receive the same after-tax profit selling to a domestic purchaser, the purchaser would have to offer at least \$538/MBF. In other words, a domestic purchaser would have to offer a price more than 7 percent higher than a foreign purchaser in order to compete for the same log. In a highly competitive commodity market, this puts the domestic purchasers at a distinct disadvantage, as a matter of federal policy.

For the highest quality logs, the export premium is so large that an elimination of the FSC subsidy is unlikely to make a significant difference in log seller decisions on who to sell their logs to. In 1992, the average value of softwood sawlogs exported to Japan was \$748/MBF, about \$250 more per MBF than the average domestic price. These are not the same kinds of logs, however. They tend to be of larger diameter, finer grain, with fewer knots, taper, sweep, or other

²⁸ Letter from Joint Committee on Taxation, U.S. House of Representatives to the Honorable Fortney Stark, February 6, 1992.

²⁹ Warren, 1993. *Op. cit.*

defects. For fine products such as furniture, moldings, and other millwork, domestic purchasers pay the export price and get the same high-quality logs as purchased by Japan. With an export premium of 50 percent or more, a 7 percent FSC subsidy has little influence over the log seller's decision to sell to the export market, and the elimination of the subsidy is unlikely to change those decisions.

However, about a quarter of the logs exported to the Far East are similar in quality to what is purchased by domestic mills. For these logs there is little or no export premium and the prices between the foreign and domestic markets are very competitive. In 1992, a total of 500.8 MMBF in softwood sawlogs was exported to Korea and China, with a total value of \$244 million. The average price for the timber exported to China was \$500/MBF, and to Korea \$477/MBF. During the same period, domestic prices for comparable grade (#2) Douglas-fir sawlogs averaged \$475/MBF in western Washington and \$539/MBF in western Oregon.³⁰ Export prices have risen substantially during the past five years, but domestic prices have risen even faster, substantially closing the gap between export and domestic prices for average-quality softwood sawlogs.

Timber supply and employment effects of eliminating the log export subsidy

Elimination of the FSC subsidy would put domestic purchasers on an even footing with foreign buyers, and could result in a substantial portion of these average-quality logs staying in the domestic market. As described above, equivalent prices between the export and domestic markets would still result in a financial decision by the log seller to sell to the foreign buyer. A domestic purchaser would have to offer a significantly higher price in order for the log seller to receive the same after-tax income. While there may be good reasons for the federal government to not interfere with the free export of private goods, a federal policy that places domestic purchasers at a distinct competitive disadvantage, and uses taxpayer dollars to put needed raw materials further out of reach for Pacific Northwest mills is not in the public interest,

³⁰ *Log Lines*, Arbor-Pacific Forestry Services, Mount Vernon, WA, 1993.

for the American people generally and for the people of the Pacific Northwest in particular.

Adding a substantial portion of this 500 MMBF back to the PNW regional timber supply could sustain at least 1,000 jobs in the Pacific Northwest region. If by eliminating the FSC subsidy 250 MMBF of domestic-quality logs--half of what is now exported to Korea and China and less than one eighth of the total volume of softwood sawlogs currently being exported from Oregon and Washington--can be retained for processing by Pacific Northwest mills, it could help sustain more than 650 additional direct jobs in forest-products and related industries and an additional 350 jobs in indirect/induced employment--jobs that would otherwise be lost as the regional timber supply continues to decline.

Economists at the Forest Service and elsewhere have estimated that every million board feet of timber harvested generates approximately 9.3 jobs/MMBF are generated directly in the forest products industry.³¹ An additional 5.7 jobs/MMBF is generated through indirect and induced employment.³² About 73 percent of this employment is generated by timber harvesting and would occur whether the logs were subsequently exported or milled domestically. Thus, the domestic milling of logs that otherwise would be exported generates approximately 4.0 jobs/MMBF in direct, indirect, and induced employment--about 1,000 total jobs from the additional 250 MMBF/year. This might be offset to some extent by the tradeoff of export-related employment and the indirect and induced jobs it represents.

³¹ USDA Forest Service, *Economic Effects of Critical Habitat Areas on the National Forests, An Update of the June 5, 1991 Analysis* (Washington, DC: USDA Forest Service, October 1991).

³² *Direct* employment includes both primary and secondary wood processing. Primary wood processing consists of logging, lumber production, plywood production, and the manufacture of pulp and paper. Secondary wood processing is the manufacturing of finished goods (e.g., furniture, millwork). *Indirect* employment generally consists of activities servicing the timber industry, such as transportation, marketing, and equipment sales/maintenance. *Induced* employment involves providing goods and services purchased with wages, taxes, and other forms of income derived from the forest products industry by individuals and government, ranging from local government employees to employees of the local bank or grocer.

A bill currently under consideration in the House, H.R. 1542, proposes to eliminate the FSC subsidy for log exports while retaining the original intent of the FSC for all other exports, including lumber, panels, and other wood and paper products. This approach would do away with a subsidy that is not needed and that works at cross purposes with efforts to mitigate the economic impact of reduced timber supply on the economic health and welfare of communities in western Oregon and western Washington.

One further consideration is for federal policymakers to take the estimated \$100 million annually that now underwrites the log export subsidy, along with some portion of the federal income tax windfall associated with the recent steep rise in timber prices in the Pacific Northwest, and invest it in economic transition assistance aimed at developing a sustainable regional economy that is ecologically sound, economically viable, and socially responsible.

Appendix A:

Federal payments to counties in Washington and Oregon, 1974–1992, with projections to 2002 based on a ten-year rolling average (by total payments and per-acre equivalent).

Average per acre Oregon and Washington payments to
counties 1972-1992 with projections to 2002 based on
10-year rolling average (1991-2 adjusted for
spotted owl guarantees)

	O&C	OR FS	WA FS	OR&WA FS
1972	14.67			
1973	18.38	4.29		
1974	22.51	4.02	1.69	
1975	19.22	3.52	1.58	2.51
1976	34.55	6.34	2.04	4.10
1977	41.31	8.49	2.86	5.55
1978	8.00	9.96	3.09	6.38
1979	37.70	11.73	4.00	7.70
1980	38.02	9.89	3.32	6.46
1981	37.77	8.43	2.90	5.54
1982	15.31	4.63	1.88	3.20
1983	2.00	6.36	2.05	4.11
1984	18.61	7.99	2.50	5.12
1985	25.91	8.81	2.12	5.32
1986	23.81	10.73	2.70	6.54
1987	28.20	12.36	3.29	7.63
1988	27.00	13.68	4.43	8.85
1989	42.79	15.83	4.71	10.03
1990	79.68	13.86	3.66	8.54
1991	37.44	13.03	4.03	8.33
1992	35.31	12.04	3.41	7.54
1993	32.07	11.47	3.29	7.20
1994	35.08	11.98	3.41	7.51
1995	36.73	12.38	3.50	7.75
1996	37.81	12.74	3.64	7.99
1997	39.21	12.94	3.74	8.14
1998	40.31	12.99	3.78	8.19
1999	41.64	12.93	3.72	8.12
2000	41.53	12.64	3.62	7.93
2001	37.71	12.51	3.62	7.87
2002	37.74	12.46	3.57	7.82

Source: USDA Forest Service and USDI Bureau of Land
Management

Table A.1-Forest Service 25% payments to counties 1973-1992, with projections to 2002 based on 10-year rolling average

(1991-2 adjusted for spotted owl guarantees)

County/ Acre		Clackamas (510424)	Curry (559739)		Douglas (904993)	Jackson (402380)	Josephine (296170)	Lane (1334031)	Linn (466332)	Multnomah (76423)	Tillamook (91223)	Yamhill (25500)									
	Benton (16310)	Coos (57939)	Deschutes (980193)		Hood R. (212637)	Jefferson (164996)	Klamath (1722703)	Lincoln (171651)	Marion (204117)	Polk (318)	Wasco (211350)	Total (8409429)									
in million dollars																					
1973	0.16	2.56	0.24	1.81	1.02	5.59	1.07	1.55	0.20	0.97	2.45	9.68	1.65	3.23	1.30	0.36	0.00	0.89	1.05	0.25	36.04
1974	0.14	2.65	0.23	1.80	1.75	3.78	1.10	1.28	0.32	0.96	2.91	8.72	1.44	3.03	1.25	0.37	0.00	0.78	1.08	0.22	33.83
1975	0.11	1.97	0.20	1.60	1.03	4.82	0.82	1.28	0.19	0.86	2.00	7.91	1.14	2.76	1.08	0.28	0.00	0.62	0.80	0.17	29.64
1976	0.22	3.64	0.39	3.03	2.77	7.62	1.52	1.97	0.50	1.60	4.14	13.69	2.27	4.63	1.86	0.52	0.00	1.23	1.49	0.27	53.35
1977	0.31	3.72	0.48	3.45	3.69	9.31	1.55	2.97	0.65	1.85	5.67	20.75	3.22	7.28	2.61	0.53	0.01	1.75	1.52	0.07	71.36
1978	0.36	4.07	0.62	4.65	3.38	12.82	1.69	4.27	0.60	2.51	7.65	22.36	3.77	7.46	2.71	0.58	0.01	2.04	1.66	0.56	83.78
1979	0.39	5.39	0.78	6.28	4.41	14.98	2.24	5.27	0.78	3.37	9.86	24.09	4.05	7.97	3.03	0.76	0.01	2.20	2.20	0.61	98.66
1980	0.32	7.05	0.53	3.86	3.08	10.35	2.94	3.43	0.58	2.08	7.80	21.20	3.35	7.34	3.08	1.00	0.01	1.81	2.88	0.50	83.19
1981	0.36	5.59	0.48	3.05	4.64	9.70	2.33	4.38	0.82	1.71	6.58	13.06	3.73	6.26	2.57	0.79	0.01	2.02	2.28	0.56	70.91
1982	0.14	2.26	0.18	1.01	2.22	6.41	0.94	1.76	0.39	0.58	2.90	11.03	1.52	3.90	1.43	0.32	0.00	0.82	0.92	0.23	38.97
1983	0.19	3.67	0.27	1.71	4.53	6.65	1.53	3.91	0.78	1.02	7.57	9.56	2.30	4.59	1.82	0.52	0.00	1.08	1.50	0.30	53.50
1984	0.27	4.01	0.34	2.05	5.10	10.55	1.67	2.77	0.88	1.14	9.89	14.97	2.80	4.69	1.90	0.57	0.01	1.51	1.64	0.42	67.16
1985	0.28	3.46	0.46	3.35	5.02	9.53	1.44	4.18	0.86	1.85	10.22	18.15	2.89	6.24	2.28	0.49	0.01	1.57	1.41	0.43	74.10
1986	0.39	5.44	0.55	3.50	4.84	11.74	2.27	4.58	0.85	1.94	11.75	22.29	4.10	7.30	2.85	0.77	0.01	2.20	2.22	0.61	90.19
1987	0.35	5.38	0.58	4.13	4.44	18.99	2.24	5.47	0.78	2.29	13.04	25.34	3.70	8.52	3.20	0.77	0.01	1.99	2.20	0.55	103.97
1988	0.48	6.70	0.73	4.90	3.55	16.09	2.79	5.48	0.65	2.68	15.61	29.46	5.06	9.87	3.77	0.97	0.01	2.72	2.74	0.75	115.01
1989	0.53	6.27	0.89	6.42	3.20	22.82	2.60	6.40	0.59	3.48	16.83	34.56	5.56	11.49	4.18	0.91	0.01	2.99	2.58	0.83	133.14
1990	0.34	6.12	0.62	4.67	4.18	24.28	2.54	4.46	0.75	2.52	13.30	29.50	3.57	10.13	3.76	0.89	0.01	1.92	2.52	0.53	116.60
1991	0.41	5.94	0.67	4.80	3.28	18.89	2.47	4.97	0.60	2.60	13.31	28.19	4.26	9.41	3.53	0.89	0.01	2.29	2.45	0.63	109.60
1992	0.38	5.36	0.61	4.25	3.64	16.84	2.23	4.82	0.65	2.32	13.23	25.54	3.97	8.48	3.18	0.80	0.01	2.11	2.22	0.59	101.22
1993	0.36	5.23	0.57	3.98	4.18	15.64	2.18	4.70	0.74	2.18	12.48	23.76	3.82	8.07	3.05	0.76	0.01	2.04	2.15	0.56	96.45
1994	0.38	5.39	0.60	4.20	4.14	16.54	2.24	4.78	0.74	2.30	12.97	25.18	3.97	8.42	3.17	0.78	0.01	2.13	2.21	0.59	100.74
1995	0.39	5.53	0.63	4.42	4.05	17.13	2.30	4.98	0.72	2.42	13.27	26.20	4.09	8.79	3.30	0.80	0.01	2.20	2.27	0.61	104.10
1996	0.40	5.74	0.65	4.52	3.95	17.89	2.39	5.06	0.71	2.47	13.58	27.00	4.21	9.05	3.40	0.83	0.01	2.26	2.36	0.62	107.10
1997	0.40	5.77	0.66	4.63	3.86	18.51	2.40	5.11	0.69	2.53	13.76	27.47	4.22	9.22	3.45	0.84	0.01	2.26	2.37	0.63	108.79
1998	0.41	5.81	0.66	4.68	3.80	18.46	2.42	5.08	0.68	2.55	13.83	27.69	4.28	9.29	3.48	0.85	0.01	2.29	2.39	0.63	109.28
1999	0.40	5.72	0.66	4.66	3.83	18.70	2.38	5.04	0.69	2.54	13.66	27.51	4.20	9.24	3.45	0.83	0.01	2.25	2.35	0.62	108.70
2000	0.39	5.66	0.63	4.48	3.89	18.29	2.35	4.90	0.70	2.44	13.34	26.80	4.06	9.01	3.38	0.83	0.01	2.17	2.33	0.60	106.26
2001	0.39	5.61	0.63	4.46	3.86	17.69	2.34	4.94	0.69	2.44	13.34	26.53	4.11	8.90	3.34	0.82	0.01	2.20	2.31	0.61	105.23
2002	0.39	5.58	0.63	4.43	3.92	17.57	2.32	4.94	0.70	2.42	13.35	26.37	4.09	8.85	3.32	0.81	0.01	2.19	2.30	0.61	104.79

Table A.2-Forest Service 25% payments/acre to Oregon counties 1973-1992, with projections to 2002 based on 10-year rolling average

(1991-2 adjusted for spotted owl guarantees)

County/ Acre	Clackamas (510424)		Curry (559739)		Douglas (904993)		Jackson (402380)		Josephine (296170)		Lane (1334031)		Linn (466332)		Multnomah (76423)		Tillamook (91223)		Yamhill (25500)		Average (8409429)
	Benton (16310)	Coos (57939)	Deschutes (980193)	Hood R. (212637)	Jefferson (164996)	Klamath (1722703)	Lincoln (171651)	Marion (204117)	Polk (318)	Wasco (211350)											
in dollars per acre																					
1973	9.69	5.02	4.13	3.23	1.04	6.17	5.02	3.86	1.19	3.29	1.42	7.25	9.63	6.92	6.37	4.75	9.69	9.80	4.96	9.67	4.29
1974	8.47	5.19	4.02	3.22	1.79	4.18	5.19	3.19	1.92	3.24	1.69	6.54	8.42	6.49	6.13	4.91	8.47	8.57	5.12	8.45	4.02
1975	6.68	3.86	3.47	2.86	1.05	5.33	3.86	3.18	1.16	2.90	1.16	5.93	6.64	5.92	5.30	3.65	6.69	6.76	3.81	6.67	3.52
1976	13.30	7.13	6.69	5.41	2.83	8.42	7.13	4.90	3.01	5.42	2.40	10.26	13.22	9.94	9.11	6.74	13.31	13.46	7.04	10.58	6.34
1977	18.91	7.28	8.29	6.16	3.76	10.29	7.27	7.38	3.93	6.25	3.29	15.55	18.74	15.61	12.79	6.87	18.95	19.17	7.17	2.70	8.49
1978	22.15	7.98	10.69	8.31	3.45	14.17	7.97	10.60	3.65	8.46	4.44	16.76	21.95	16.00	13.28	7.54	22.17	22.42	7.86	22.11	9.96
1979	23.80	10.55	13.42	11.22	4.50	16.55	10.54	13.10	4.73	11.36	5.73	18.06	23.61	17.09	14.86	9.97	23.82	24.11	10.40	23.77	11.73
1980	19.64	13.82	9.16	6.90	3.14	11.44	13.85	8.53	3.50	7.01	4.53	15.89	19.53	15.74	15.07	13.07	19.65	19.89	13.63	19.61	9.89
1981	21.82	10.95	8.37	5.44	4.74	10.72	10.95	10.89	4.97	5.76	3.82	9.79	21.73	13.43	12.57	10.36	21.83	22.10	10.80	21.78	8.43
1982	8.87	4.44	3.07	1.80	2.26	7.08	4.43	4.37	2.36	1.95	1.68	8.27	8.84	8.37	7.03	4.19	8.88	8.98	4.37	8.86	4.63
1983	11.71	7.20	4.59	3.05	4.62	7.35	7.21	9.73	4.73	3.43	4.39	7.16	13.43	9.84	8.93	6.81	11.72	11.86	7.10	11.70	6.36
1984	16.32	7.85	5.93	3.66	5.20	11.65	7.86	6.88	5.32	3.85	5.74	11.22	16.29	10.05	9.30	7.43	16.34	16.60	7.75	16.30	7.99
1985	16.90	6.77	7.91	5.98	5.12	10.53	6.77	10.39	5.22	6.25	5.93	13.60	16.86	13.39	11.15	6.41	16.91	17.18	6.67	16.87	8.81
1986	23.91	10.66	9.56	6.25	4.94	12.97	10.67	11.39	5.14	6.56	6.82	16.71	23.86	15.65	13.96	10.10	23.93	24.14	10.51	23.82	10.73
1987	21.58	10.53	10.03	7.37	4.53	20.99	10.55	13.59	4.75	7.73	7.57	19.00	21.55	18.28	15.67	10.10	21.60	21.79	10.39	21.50	12.36
1988	29.48	13.13	12.63	8.75	3.62	17.78	13.13	13.62	3.95	9.04	9.06	22.08	29.50	21.16	18.46	12.63	30.92	29.80	12.96	29.50	13.68
1989	32.40	12.29	15.38	11.47	3.26	25.21	12.25	15.90	3.59	11.74	9.77	25.91	32.42	24.64	20.49	11.89	32.43	32.75	12.23	32.43	15.83
1990	20.81	11.99	10.67	8.34	4.26	26.83	11.96	11.08	4.54	8.50	7.72	22.12	20.80	21.71	18.44	11.62	20.81	21.02	11.94	20.81	13.86
1991	24.84	11.64	11.61	8.57	3.34	20.87	11.62	12.35	3.64	8.79	7.73	21.13	24.84	20.18	17.30	11.59	24.84	25.12	11.61	24.84	13.03
1992	23.14	10.50	10.51	7.60	3.71	18.61	10.49	11.97	3.95	7.84	7.68	19.14	23.14	18.18	15.59	10.49	23.14	23.14	10.49	23.14	12.04
1993	22.11	10.26	9.88	7.10	4.26	17.28	10.25	11.69	4.48	7.37	7.24	17.81	22.27	17.31	14.93	9.91	22.26	22.34	10.17	22.09	11.47
1994	23.15	10.56	10.41	7.51	4.23	18.27	10.55	11.88	4.46	7.77	7.53	18.87	23.15	18.06	15.53	10.22	23.32	23.39	10.47	23.13	11.98
1995	23.83	10.83	10.86	7.89	4.13	18.93	10.82	12.39	4.37	8.16	7.70	19.64	23.84	18.86	16.15	10.49	24.02	24.07	10.74	23.81	12.38
1996	24.52	11.24	11.16	8.08	4.03	19.77	11.23	12.58	4.29	8.35	7.88	20.24	24.54	19.40	16.65	10.90	24.73	24.75	11.15	24.51	12.74
1997	24.59	11.30	11.31	8.27	3.94	20.45	11.28	12.70	4.20	8.53	7.99	20.59	24.60	19.78	16.92	10.98	24.81	24.82	11.22	24.58	12.94
1998	24.89	11.37	11.44	8.36	3.88	20.40	11.36	12.62	4.15	8.61	8.03	20.75	24.91	19.93	17.05	11.07	25.13	25.12	11.30	24.88	12.99
1999	24.43	11.20	11.32	8.32	3.90	20.66	11.18	12.52	4.17	8.57	7.93	20.62	24.45	19.80	16.90	10.91	24.55	24.65	11.13	24.42	12.93
2000	23.63	11.09	10.92	8.00	3.97	20.21	11.07	12.18	4.22	8.25	7.74	20.09	23.65	19.32	16.55	10.82	23.76	23.84	11.02	23.62	12.64
2001	23.91	11.00	10.94	7.97	3.94	19.55	10.99	12.29	4.19	8.22	7.74	19.89	23.94	19.08	16.36	10.74	24.05	24.12	10.93	23.90	12.51
2002	23.82	10.93	10.88	7.91	4.00	19.41	10.92	12.28	4.25	8.17	7.75	19.76	23.85	18.97	16.26	10.65	23.98	24.02	10.86	23.81	12.46

Table A.3-Forest Service 25% payments to Washington counties 1974-1992, with projections to 2002 based on 10-year rolling average

(1991-2 adjusted for spotted owl guarantees)

County/ Acre	Clallam (519728)		Cowlitz (32610)		Jefferson (700461)		Kittitas (413164)		Mason (164866)		Pierce (124579)		Skamania (846995)		Thurston (622)		Yakima (504095)		
	Chelan (1441113)	Clark (1180)		Grays H. (149584)		King (349467)		Lewis (446116)		Okanogan (1499866)		Skagit (518633)		Snohomish (631606)		Whatcom (836277)		Total (918096)	
in million dollars																			
1974	0.82	0.97	0.01	0.12	0.03	1.32	0.70	0.32	2.27	0.31	0.78	0.27	0.38	4.63	0.70	0.00	0.66	1.18	15.49
1975	0.37	1.16	0.01	0.12	0.27	0.90	0.81	0.23	2.27	0.28	0.32	0.32	0.32	4.56	0.71	0.00	0.56	1.34	14.54
1976	0.80	1.19	0.01	0.12	0.37	1.61	0.87	0.35	2.34	0.12	0.73	0.34	0.67	4.70	1.07	0.00	2.03	1.43	18.76
1977	1.27	1.88	0.01	0.16	0.58	2.54	1.31	0.54	3.12	0.60	1.53	0.51	0.86	6.26	1.46	0.00	1.50	2.12	26.24
1978	1.36	1.88	0.01	0.20	0.58	2.53	1.07	0.52	3.75	0.59	1.26	0.41	1.12	7.74	1.58	0.00	1.97	1.84	28.41
1979	1.50	2.94	0.02	0.25	0.91	3.97	1.43	0.61	4.76	0.93	1.41	0.56	1.28	9.79	1.87	0.00	2.07	2.45	36.75
1980	0.93	2.95	0.01	0.16	0.91	3.99	1.44	0.47	3.20	0.94	1.56	0.56	1.14	6.36	1.75	0.00	1.84	2.30	30.50
1981	1.42	2.16	0.01	0.15	0.67	2.92	1.42	0.59	2.94	0.69	1.60	0.55	1.05	5.79	0.72	0.00	1.70	2.25	26.62
1982	0.32	1.38	0.01	0.10	0.43	1.87	0.85	0.22	1.91	0.44	0.40	0.33	0.95	3.82	1.30	0.00	1.57	1.36	17.25
1983	0.90	1.12	0.01	0.12	0.34	1.51	0.99	0.39	2.30	0.35	1.29	0.38	0.69	4.62	1.12	0.00	1.12	1.59	18.85
1984	1.34	1.58	0.01	0.14	0.49	2.13	1.07	0.51	2.74	0.50	0.62	0.41	1.03	5.55	1.46	0.00	1.67	1.75	22.99
1985	1.31	1.12	0.01	0.13	0.35	1.51	0.83	0.46	2.48	0.35	0.82	0.32	0.82	5.11	1.15	0.00	1.33	1.39	19.48
1986	2.37	1.53	0.01	0.20	0.47	2.07	1.25	0.79	2.89	0.49	1.09	0.45	0.77	5.93	1.31	0.00	1.24	1.95	24.78
1987	1.90	1.59	0.01	0.30	0.49	2.14	1.64	0.74	3.87	0.50	1.44	0.59	1.04	7.91	1.75	0.00	1.68	2.57	30.17
1988	2.29	2.35	0.02	0.44	0.72	3.17	1.76	0.86	5.46	0.74	2.26	0.63	1.35	11.42	2.09	0.00	2.18	2.89	40.64
1989	2.61	2.57	0.01	0.42	0.79	3.46	2.39	1.04	5.27	0.81	2.92	0.86	1.27	10.73	2.33	0.00	2.05	3.70	43.25
1990	2.28	1.82	0.01	0.33	0.53	2.46	2.00	0.89	4.24	0.58	1.34	0.72	1.05	8.61	1.93	0.00	1.70	3.06	33.56
1991	2.16	2.03	0.01	0.38	0.58	2.74	2.17	0.89	4.82	0.64	1.95	0.78	1.15	9.85	2.08	0.00	1.85	2.91	37.00
1992	2.06	1.78	0.01	0.31	0.51	2.40	1.74	0.79	3.90	0.57	1.63	0.61	0.99	8.04	1.72	0.00	1.59	2.67	31.34
1993	1.92	1.75	0.01	0.28	0.53	2.36	1.58	0.74	3.80	0.55	1.53	0.58	1.02	7.78	1.69	0.00	1.64	2.45	30.21
1994	2.02	1.81	0.01	0.29	0.55	2.44	1.64	0.77	3.95	0.57	1.56	0.59	1.05	8.09	1.75	0.00	1.69	2.53	31.34
1995	2.09	1.83	0.01	0.31	0.55	2.47	1.70	0.80	4.07	0.58	1.65	0.61	1.05	8.35	1.78	0.00	1.70	2.61	32.18
1996	2.17	1.91	0.01	0.33	0.57	2.57	1.79	0.83	4.23	0.60	1.74	0.64	1.07	8.67	1.84	0.00	1.73	2.73	33.45
1997	2.15	1.94	0.01	0.34	0.58	2.62	1.84	0.83	4.36	0.62	1.80	0.66	1.10	8.95	1.90	0.00	1.78	2.81	34.31
1998	2.18	1.98	0.01	0.34	0.59	2.67	1.86	0.84	4.41	0.63	1.84	0.67	1.11	9.05	1.91	0.00	1.79	2.84	34.73
1999	2.16	1.94	0.01	0.33	0.58	2.62	1.87	0.84	4.30	0.62	1.80	0.67	1.09	8.81	1.89	0.00	1.75	2.83	34.14
2000	2.12	1.88	0.01	0.32	0.56	2.54	1.82	0.82	4.21	0.60	1.68	0.65	1.07	8.62	1.85	0.00	1.72	2.75	33.22
2001	2.10	1.89	0.01	0.32	0.56	2.54	1.80	0.81	4.20	0.60	1.72	0.65	1.07	8.62	1.84	0.00	1.73	2.71	33.19
2002	2.10	1.87	0.01	0.32	0.56	2.52	1.77	0.81	4.14	0.59	1.69	0.63	1.06	8.50	1.82	0.00	1.71	2.70	32.81

Table A.4- Forest Service 25% payments/acre to Washington counties 1974-1992, with projections to 2002 based on 10-year rolling average

(1991-2 adjusted for spotted owl guarantees)

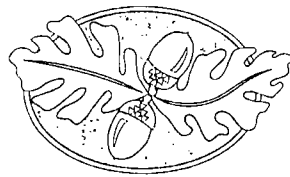
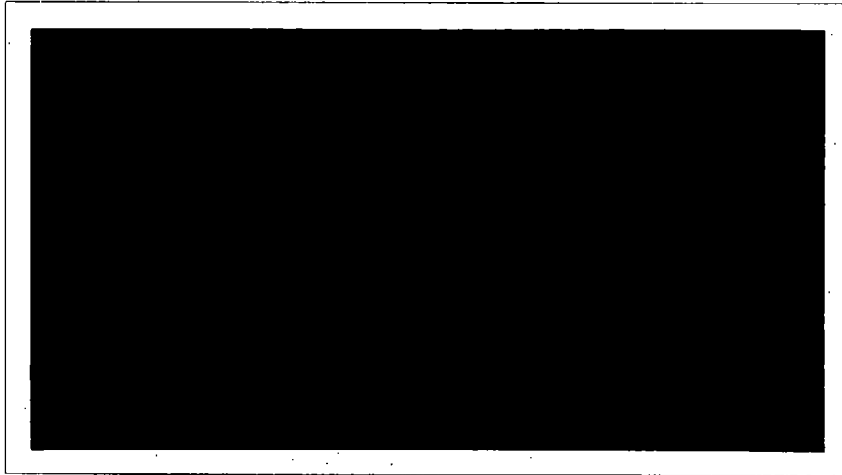
County/ Acre	Clallam (519728)		Cowlitz (32610)		Jefferson (700461)		Kittitas (413164)		Mason (164866)		Pierce (124579)		Skamania (846995)		Thurston (622)		Yakima (504095)		Average
	Chelan (1441113)	Clark (1180)	Grays H. (149584)		King (349467)		Lewis (446116)		Okanogan (1499866)		Skagit (518633)		Snohomish (631606)		Whatcom (836277)				(918096)
	in dollars per acre																		
1974	0.57	1.87	6.92	3.69	0.21	1.88	1.99	0.78	5.09	1.88	0.52	2.17	0.73	5.47	1.12	2.08	0.79	2.34	1.69
1975	0.26	2.23	6.82	3.63	1.78	1.29	2.33	0.55	5.08	1.69	0.21	2.54	0.62	5.39	1.13	2.42	0.67	2.67	1.58
1976	0.56	2.29	7.02	3.74	2.46	2.29	2.50	0.84	5.25	0.75	0.49	2.72	1.30	5.55	1.69	2.61	2.43	2.85	2.04
1977	0.88	3.61	9.33	4.89	3.87	3.62	3.75	1.29	7.00	3.62	1.02	4.08	1.65	7.39	2.32	3.91	1.80	4.20	2.86
1978	0.95	3.61	11.55	6.05	3.86	3.61	3.05	1.25	8.40	3.60	0.84	3.32	2.17	9.14	2.51	3.19	2.35	3.66	3.09
1979	1.04	5.66	14.60	7.66	6.06	5.67	4.10	1.48	10.67	5.66	0.94	4.47	2.47	11.56	2.96	4.31	2.47	4.86	4.00
1980	0.65	5.68	9.48	4.90	6.09	5.69	4.11	1.14	7.16	5.68	1.04	4.48	2.20	7.50	2.76	4.23	2.20	4.56	3.32
1981	0.99	4.16	8.64	4.46	4.45	4.16	4.06	1.43	6.59	4.16	1.06	4.42	2.03	6.84	1.14	4.24	2.03	4.46	2.90
1982	0.22	2.66	4.57	2.97	2.86	2.67	2.44	0.53	4.28	2.66	0.27	2.65	1.83	4.51	2.06	2.55	1.88	2.70	1.88
1983	0.63	2.15	5.53	3.60	2.30	2.15	2.83	0.94	5.17	2.15	0.86	3.08	1.33	5.46	1.77	2.94	1.34	3.16	2.05
1984	0.93	3.04	6.63	4.31	3.25	3.04	3.06	1.24	6.14	3.04	0.41	3.33	1.99	6.55	2.32	3.19	2.00	3.46	2.50
1985	0.91	2.15	6.11	3.97	2.31	2.16	2.36	1.12	5.56	2.15	0.54	2.58	1.58	6.03	1.82	2.47	1.59	2.75	2.12
1986	1.64	2.95	6.90	6.16	3.16	2.95	3.57	1.92	6.47	2.95	0.72	3.60	1.48	7.00	2.07	3.54	1.48	3.86	2.70
1987	1.32	3.05	9.20	9.35	3.27	3.05	4.70	1.79	8.68	3.05	0.96	4.74	2.01	9.34	2.77	4.72	2.01	5.09	3.29
1988	1.59	4.52	13.36	13.62	4.84	4.52	5.04	2.08	12.23	4.52	1.51	5.09	2.61	13.49	3.30	5.01	2.61	5.72	4.43
1989	1.81	4.94	12.54	12.78	5.29	4.94	6.85	2.51	11.82	4.94	1.94	6.91	2.45	12.67	3.69	6.88	2.45	7.35	4.71
1990	1.58	3.51	10.24	10.24	3.51	3.51	5.72	2.15	9.50	3.51	0.89	5.74	2.03	10.17	3.06	5.65	2.03	6.08	3.66
1991	1.50	3.91	11.69	11.69	3.91	3.91	6.22	2.14	10.80	3.91	1.30	6.24	2.21	11.63	3.29	6.14	2.22	5.78	4.03
1992	1.43	3.43	9.49	9.49	3.43	3.43	4.97	1.91	8.75	3.43	1.08	4.89	1.91	9.49	2.72	4.94	1.91	5.31	3.41
1993	1.33	3.36	9.17	8.52	3.53	3.37	4.53	1.78	8.51	3.36	1.02	4.62	1.96	9.18	2.68	4.55	1.96	4.86	3.29
1994	1.40	3.49	9.53	9.01	3.65	3.49	4.70	1.86	8.85	3.49	1.04	4.77	2.02	9.55	2.77	4.71	2.03	5.03	3.41
1995	1.45	3.53	9.82	9.48	3.69	3.53	4.87	1.93	9.12	3.53	1.10	4.92	2.03	9.86	2.82	4.86	2.03	5.18	3.50
1996	1.51	3.67	10.20	10.03	3.83	3.67	5.12	2.01	9.47	3.67	1.16	5.15	2.07	10.24	2.92	5.10	2.07	5.43	3.64
1997	1.49	3.74	10.52	10.42	3.89	3.74	5.27	2.02	9.77	3.74	1.20	5.31	2.13	10.56	3.00	5.26	2.13	5.58	3.74
1998	1.51	3.81	10.66	10.53	3.96	3.81	5.33	2.04	9.88	3.81	1.23	5.36	2.14	10.68	3.02	5.31	2.14	5.63	3.78
1999	1.50	3.74	10.39	10.22	3.87	3.74	5.36	2.04	9.65	3.74	1.20	5.39	2.10	10.40	3.00	5.34	2.10	5.62	3.72
2000	1.47	3.62	10.17	9.96	3.73	3.62	5.21	1.99	9.43	3.62	1.12	5.24	2.06	10.18	2.93	5.19	2.06	5.45	3.62
2001	1.46	3.63	10.16	9.94	3.75	3.63	5.16	1.97	9.42	3.63	1.15	5.19	2.06	10.18	2.92	5.14	2.06	5.39	3.62
2002	1.46	3.60	10.01	9.76	3.73	3.60	5.05	1.95	9.29	3.60	1.13	5.08	2.05	10.03	2.88	5.04	2.05	5.35	3.57



FOREST POLICY CENTER

1516 P STREET, NW WASHINGTON, DC 20005
(202) 667-3300 FAX (202) 667-7751

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FOREST POLICY CENTER

**COMPONENTS OF A
FOREST CONSERVATION AND
ECONOMIC TRANSITION ASSISTANCE PLAN
FOR THE PACIFIC NORTHWEST**

A Discussion Paper

**FOREST POLICY CENTER
1516 P Street, NW
Washington, DC 20006
(202) 667-3300
FAX 667-7751**

**V. Alaric Sample
*Director***

May 12, 1993

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V. Alaric Sample
May 12, 1993

Introduction

On April 2, 1993 in Portland, Oregon, President Bill Clinton, Vice President Albert Gore and the heads of the departments of Agriculture, Interior, Labor, Commerce, OMB and EPA gave their undivided attention to listening to the people of the Pacific Northwest and trying to understand the controversy over habitat protection for the threatened northern spotted owl. Not since the days of Theodore Roosevelt has a sitting president so dedicated his own time and that of his senior Administration officials to an issue of forest conservation. In Roosevelt's day, the talk was of sustained-yield forestry, and of halting the overexploitation of forest resources that threatened the supply of timber for a rapidly expanding nation. In Clinton's day, the talk has evolved to the protection and sustainable management of forest ecosystems, managing our forest resources in a way that is simultaneously ecologically sound, economically viable, and socially responsible.

Regionally, nationally, and internationally, conservation and economic interests that have traditionally opposed one another have begun to recognize that a healthy environment and a healthy economy are not mutually exclusive, but are mutually dependent. Over the long term, it is not possible to sustain one without sustaining the other. In this new awareness, President Clinton has challenged us all to begin crafting a balanced, workable solution to one of the most difficult and seemingly intractable resource management issues of our time, and to create the political consensus that will be crucial to its successful implementation.

Following the Forest Conference in Portland, President Clinton ordered federal officials to develop a plan of action for his review by June 1, 1993 and articulated five key principles to guide their work:

1. Remain cognizant of the human and economic dimensions of the problem. Where sound management policies can preserve the health of forest lands, timber sales will go forward; where this requirement cannot be met, the plan must offer new economic opportunities for year-round, high-wage, high-skill jobs.
2. Protect the long-term health of our forests, wildlife, and waterways, holding them in trust for future generations.
3. Actions must be "scientifically sound, ecologically credible, and legally responsible."
4. Produce "a predictable and sustainable level of timber sales and non-timber resources that will not degrade or destroy the environment."

5. **Make the government work together, ending the gridlock within the federal government through insistence on collaboration, not confrontation.**

To accomplish this and develop the Administration plan, three "working groups" were established:

- * **An Ecosystem Management Assessment** working group was established to "identify management alternatives that attain the greatest economic and social contribution from the forests of the region and meet the requirements of the applicable laws and regulations, including the Endangered Species Act, the National Forest Management Act, the Federal Land Policy and Management Act, and the National Environmental Policy Act."
- * **A Labor and Community Assistance** working group is to address the forests' role in regional economic development and diversification, "accommodating properly functioning markets and facilitating the transitions inevitable in the modern global economy." A program to assist communities and displaced workers is to be developed not to dictate preferred paths for economic development but to "build upon the independence and strength of these communities and their residents and provide them with the tools needed for economic revitalization based on their own needs and on potential new opportunities in forest-related employment."
- * The charge for the **Agency Coordination** working group recognizes that interagency coordination "becomes even more critical as we move toward an ecosystem approach to forest management where a number of agencies must be involved in planning and implementing a management strategy," and requires the development of a plan to improve the working relationship among federal and state agencies in the region and eliminate impediments that block coordinated action.

Summary

The following discussion paper offers a brief background and analysis of six key components of a forest conservation and economic transition assistance plan for the Pacific Northwest that is consistent with the principles articulated by President Clinton. AMERICAN FORESTS and the Forest Policy Center strongly support the President's principles as consistent with those that have guided our own organization's efforts in forest conservation since its founding in 1874. To briefly summarize the major points of the discussion paper:

- * The use of **land stewardship contracts** in place of conventional timber sales offers opportunities for accomplishing needed resource management and ecosystem restoration activities, contributing as much as **3.2 billion board feet annually** (for the next ten years) to the Pacific Northwest timber supply, and generating as many as **52,000 jobs** in forest products and related employment. Work would be financed through a credit arrangement and would not affect federal budget outlays.

- * Ecosystem restoration actions are needed east of the Cascades in the Blue Mountains and in Northeastern Washington to reduce the risk of catastrophic wildfire, and to repair watersheds and restore the natural dynamics and resiliency of fire-dependent forest ecosystems. In the near term, these activities could generate more than **500 million board feet of timber annually** and support approximately **8,000 jobs** in forest products and related industries.
- * The expected decline in timber harvesting on federal lands will have a major impact on **federal revenue sharing** with local governments, which is currently based on a portion of federal timber receipts. Shifting to a **formula based on federal land area in each county, with payments based on a rolling ten-year average during a five-year transition period**, would fairly compensate local government for lost taxes due to tax-exempt federal land ownership and provide a high level of income that is far more stable and predictable than that based on cycling timber harvest levels and prices.
- * **Private forest lands** can play an important **complementary role to public forest lands in an ecosystem-based strategy** to protect late-successional forest habitat for the spotted owl as well as other species that might otherwise become threatened or endangered in the future. It is important to identify and eliminate the disincentives that now exist for closer cooperation with adjacent public and private forest landowners, without undercutting the economic purposes for which private organizations and individuals own and manage their forest land.
- * Income tax-based **federal log export subsidies** give foreign log buyers a competitive advantage over domestic purchasers, requiring a domestic buyer to offer a price at least 7 percent higher in order for the log seller to receive the same after-tax income as selling to a foreign buyer. Elimination of this subsidy could re-route approximately **250 million board feet annually** back to Pacific Northwest mills, sustaining at least **1,000 jobs** that otherwise would be lost. In addition, it would save an estimated \$100 million annually that the federal government could apply to economic transition assistance programs in the Pacific Northwest.
- * Recent rapid advances in remote-sensing and geographic information systems (GIS) technology have made possible the development of better ecological information on the extent, location, and nature of old-growth forests than existed even when the "Gang of Four" analysis was performed. **Use of GIS technology and improved information in a setting that allows open and direct interaction** among scientists and stakeholders may uncover alternatives that are as yet unknown and untried. This approach should be an explicit part of the planning process, and sufficient funds and other resources should be made available to ensure its success.

Land Stewardship Contracts: Opportunities for Ecosystem Management and Employment

A new approach to timber sale contracting offers opportunities to accomplish needed ecosystem management and ecological restoration activities in the Pacific Northwest, while at the same time providing additional employment in the forest-products and related industries in local communities. Land stewardship contracting fosters the integrated resource management approach central to the purposes of the National Forest Management Act (NFMA) and the Federal Land Policy and Management Act (FLPMA); such an approach is now even more important in order to effectively and successfully implement forest ecosystem management policies on federal lands.¹

For the purposes of the economic transition assistance plan for the Pacific Northwest forests affected by the need to protect old-growth habitat, land stewardship contracting can provide employment opportunities for woodworkers in and around their own communities with little or no retraining necessary. Financing this work from current income to the federal land managing agencies can help minimize the impact of the economic transition assistance package on the federal budget deficit.

Background

The FY 1992 and FY 1993 appropriations bills for the Forest Service directed the agency to test a new approach to federal timber sale contracting on several western national forests. This approach, termed "land stewardship contracting," authorized the Forest Service to "apply the

¹ National Forest Management Act, 16 U.S.C. 1600; Federal Land Policy and Management Act, 43 U.S.C. 1701.

value of a reasonable portion of the value of timber removed . . . as an offset against the cost of stewardship services received including, but not limited to, site preparation, replanting, silviculture programs, recreation, wildlife habitat enhancement, and other multiple-use enhancements."² The stewardship contracts were to be used "to help the private sector promote the Forest Service ecosystem management initiative . . . [and] to give contractors an incentive to become as concerned with sustaining ecosystems as with sustaining trees."³

In terms of procedure, this system would allow the Forest Service to contract for an array of ecosystem management and ecological restoration services as part of a total land management "package deal" with a single contractor. The contractor would be compensated for these services by receiving credit toward the amount owed to the Forest Service for timber harvested as part of the contract activities. This approach is essentially the same as the "purchaser credit" system used for many years to compensate timber purchasers for road construction and maintenance associated with a timber sale.⁴

The idea of land stewardship contracts has been well received by the Forest Service, particularly at the field level where closer integration of all land management activities is seen as a key not only to better resource management but greater program effectiveness and cost efficiency. National forest plans, developed pursuant to NFMA, are developed using an integrated resource management approach.

But integration is made difficult in the implementation of these plans by the function-by-function organizational structure of the agency (timber, recreation, wildlife, range, etc.) and by the *disintegration* of planned integrated resource management projects that takes place during

² Congressional Record, Senate, September 13, 1991, p. 12973.

³ Ibid.

⁴ National Forest Roads and Trails Act, 16 U.S.C. §§ 532-538.

the annual budgeting and appropriations process.⁵ A 1988 GAO evaluation of a Congressionally-authorized Forest Service pilot project testing an integrated "end-results" approach to Forest Service appropriations found that program accomplishments for all resources improved while overall costs were reduced. GAO observed further that this approach would help the Forest Service carry out the forest plans mandated by Congress and would facilitate greater agency accountability for appropriations.⁶ Despite this positive independent assessment, Congress has not taken necessary action to expand end-results budgeting beyond the few national forests that participated in the original pilot program.

Results to date of stewardship contract pilot study

Preliminary results of the land stewardship contracts pilot study have also been positive, and in the Forest Service's FY 1993 appropriations the number of pilot forests was expanded to include the Kaibab (AZ), Coconino (AZ), Dixie (NV), Idaho Panhandle (ID), and Lake Tahoe (NV). Congress has asked the Forest Service to study how receiving services in lieu of revenue would affect the agency's adherence to other laws relating to contracting and to revenue sharing programs. Because services under land stewardship contracts would be credited against what purchasers would normally pay for the timber they remove, Congress has been particularly interested in how this would affect the 25 percent of Forest Service receipts that are normally paid to counties in lieu of taxes.⁷ There was similar concern over the purchaser credit system used for road construction, which was resolved by adding the value of the foregone timber receipts to the amount on which the calculation of the 25 percent payment to counties is based.

⁵ Sample, V. Alaric, *The Impact of the Federal Budget Process on National Forest Planning* (Westport, CT: Greenwood Press, 1990).

⁶ U.S. Controller General, *Forest Service: Evaluation of "End-Results" Budgeting Test*, GAO/AFMD-88-45 (Washington, DC: U.S. General Accounting Office, 1988).

⁷ Twenty-Five Percent Fund Act of 1908, 16 U.S.C. 500.

Serious consideration should be given to developing a means other than payment of a share of timber receipts to compensate local government for the tax-exempt status of federal lands (see section on Compensating for Impacts on Federal Payments to Counties). This is just one example of where the existing linkage between federal revenue sharing and timber harvest levels on federal lands has become an impediment to land use and policy changes that are in the public interest. Breaking this linkage and putting federal payments to counties on a land area basis will give the counties a more even and reliable source of income and will take local government out of the position of pressuring for unsustainably high timber harvest levels simply to maintain income based on a portion of the receipts. This existing approach has been a continuing restraint on the implementation of an integrated resource management approach on federal forest lands as specified in NFMA and FLPMA. An ecosystem-based approach to forest management requires an even higher level of integrated resource management. The formula for compensating local government for lost property taxes should not, need not, and cannot continue to be an obstacle to crucial changes in land and resource management on the federal lands.

For the purposes of the economic transition assistance plan for the Pacific Northwest forests affected by the need to protect old-growth habitat, land stewardship contracting can provide employment opportunities for woodworkers in and around their own communities with little or no retraining necessary. Forest management experts at the University of Washington and Oregon State University have identified a substantial need for reforestation, thinning and other silvicultural treatments that would produce a considerable volume of second-growth timber for Pacific Northwest mills and provide significant employment opportunity for workers whose jobs are threatened by the decline in old-growth timber harvesting.

Timber supply and employment effects of stewardship contract opportunities in the Pacific Northwest

Many public and private forests west of the Cascades contain an overabundance of established second-growth stands in need of actions such as thinning in order to grow to other

structures important for a diversity of habitats.⁸ In the absence of such actions neither managed nor preserved forest areas are likely to achieve biodiversity goals. Managed areas will primarily contain dense young stands that discourage both structural and species diversity. Geographically isolated preserved areas will contain primarily old-growth until major natural disturbances occur, after which the older structures will be lost for many years.⁹

The anticipated annual volume from thinning opportunities alone in western Oregon and western Washington is estimated at more than 3.6 billion board feet (BBF) per year. In Oregon alone, there are commercial thinning opportunities in stands 20–150 years old on public, corporate, and non-industrial private lands that could generate a merchantable volume of more than 3.2 BBF per year during the next ten years.¹⁰ This conservative estimate assumes that less than 60 percent of the stands that could be thinned would actually be thinned, and that 40 percent or less of the volume will actually be removed for processing into wood products. In Washington a similar conservative approach to estimating timber volumes from commercial thinning just in stands 10–30 years old suggests that nearly 430 million board feet per year would be available.¹¹

At the current estimate of 9.3 direct forest industry jobs per million board feet of timber harvested, this could mean continued employment for nearly 33,480 timber workers now threatened with layoffs. If indirect and induced employment is considered (an additional 5.7 jobs

⁸ Oliver, C. 1991. *Thinning and pruning 10–30 year old plantations in western Washington: Investment, social, wood supply, and environmental consequences*. Report to Governor's Timber Team, Timber Committee, State of Washington.

⁹ Oliver, C., Testimony before the House Committee on Agriculture, Subcommittee on Forests, Family Farms, and Energy, March 11, 1992.

¹⁰ Perry, D., Oregon State University, personal communication, May 3, 1993. These estimates are based on the International 1/4-inch log rule, which provides a more accurate conversion of cubic foot volume to board feet for smaller diameter logs. Estimates based on the Scribner log rule would be somewhat lower.

¹¹ Oliver, C., University of Washington, personal communication, May 4, 1993.

per MMBF), this could translate to a total of as many as 54,000 jobs in Pacific Northwest communities.

Financing stewardship contracts

Financing this work from current income to the federal land managing agencies can help minimize the impact of the economic transition assistance package on the federal budget deficit. Economic assistance will be needed by the people and communities of the Pacific Northwest during this period of transition to a sustainable regional economy, with a healthy, stable forest industry based on the management and utilization of second-growth forests. This assistance, generally discussed in terms of loan guarantees and vocational training, is both appropriate and necessary to moderate the effects of a major economic adjustment, particularly in rural communities. Such programs are likely to require significant federal outlays at a time when reducing the federal budget deficit is the foremost domestic policy priority of the Administration.

The inclusion of stewardship contracts as one component in an overall economic transition assistance plan can efficiently reach the most heavily affected individuals and communities with immediate employment opportunities with little or no direct federal outlay. The purchaser credit program, used by the Forest Service to obtain road construction and maintenance services on nearly every national forest in the country, provides one model for using timber receipts to offset the cost of stewardship activities. The needed construction services are specified as an integral part of a federal timber contract describing the volume and estimated value of the timber to be sold. On most national forests, these integrated contracts are then sold in an open competitive bidding process that assures the federal government of a fair market value for both the timber sold and the services received.

Resource management and ecological restoration services could be provided either directly by the contractor or by one of the many subcontractor firms, specializing in reforestation, thinning operations, stream habitat improvement or other activity, that are likely to spring up in response to new opportunities through stewardship contracting. Small and large timber purchaser

firms have already expressed an strong interest in bidding on stewardship contracts to perform an array of resource management and ecological restoration activities to be specified by the Forest Service. Stewardship contracts would be available and attractive to the very firms that face declining prospects due to old-growth habitat protection, primarily in historically timber-dependent, rural communities. The employment opportunities these contracts represent would require little or no immediate retraining of woodworkers, or relocation from their home communities.

Accomplishing needed resource management and ecological restoration work through stewardship contracts offers the prospect of significantly moderating the impact of old-growth habitat protection at relatively low cost, targeting the employment benefits to rural communities that need it most, when they need it, and using the existing skills of individuals most affected by the habitat protection decision. Stewardship contracts deserve careful consideration as one component of an overall economic transition assistance plan for the Pacific Northwest.

**Stewardship Contracting East of the Cascades
to Mitigate Timber Supply and Employment Effects
of Spotted Owl Habitat Protection**

In light of the reduced timber availability on the coastal Cascade public forests due to the controversy over management of the remaining old growth, the loss of jobs in the region, the high price of timber (even low-quality timber) throughout the west, and the need for forest treatment in the inland forests, a five-year transition strategy could contain one element that streamlined the process of instituting forest health projects in the inland forests, along with incentives for coastal-area workers and companies to undertake the work involved.

Background

The coniferous forests lying east of the Cascade spine, and in the Sierra region of California are, in many places, in serious need of effective management treatment. The forests are very diverse, so generalizations should be avoided, but many sites occupied by Ponderosa Pine, either alone or in combination with other conifers such as Western Larch, Douglas-fir, and the true firs, show significant stress due to improper species balance and overpopulation of trees per acre. Ecologists attribute this situation to a variety of causes, including removal of the high-value and largest trees in early logging, a wet period in the first part of the 20th Century that may have allowed moist-site species such as fir to invade sites normally more suited for pine and larch, and aggressive fire protection in the past half-century that kept small trees and fire-intolerant species from being "weeded out" of these forests.

As the trees have grown larger and more dense, a drought cycle in the past decade has exacerbated moisture and nutrient stress in overcrowded stands. Opportunistic insect and disease populations have soared, and large areas of dead and dying trees have resulted. In some stands, this timber holds significant economic value if harvested within 1-3 years after mortality;

thereafter the economic value drops off rapidly. Allowed to remain on site, this dead timber presents a huge fuel load which, if ignited, can result in uncontrollable wildfires that do major ecosystem damage because of the abnormally intense heats generated.

Where these forest areas burn, a new even-aged management cycle must begin again, often on soils and sites that have been degraded by the effects of intense fire. Where these stands can be treated while a fair component of trees still remain alive, it is possible to begin a new management system (now increasingly called ecosystem management) that focuses on ways to retain the forests in healthy, dynamic, diverse conditions. Such treatments will provide jobs, produce timber products, and restore forests to improved condition.

The needed treatment projects are not now being done, however. For example, the Northeastern Washington National Forest Health Report says that, "on the three national forests in northeastern Washington, about 2,980,000 acres are at risk of death from insects, disease and wildfire. Salvage and green timber sales, thinning and related activities, and reforestation programs deal with about 26,000 acres of susceptible lands annually under existing budgets." Obviously, this 100-year+ rotation is not going to meet the forest health needs of those forests.

One reason seems to be the lack of both programs and budgets within the agencies for effectively planning and implementing forest health-related treatments. The agencies rely heavily on timber sales, both salvage sales after mortality and green sales of merchantable logs, as their major silvicultural treatment device. This makes it difficult to plan and pay for the large amounts of work needed that are not directly related to the removal of merchantable timber, because there is no direct source of funds or program support to pay for such work. The emphasis on timber sales has also generated great public skepticism which makes it difficult for resource managers to propose other types of treatment without great public cynicism about it being a "clearcut in disguise." That skepticism, particularly as it has resulted in cumbersome planning, review, and timber sale processes, can extend the time and costs involved to the point where many projects are infeasible.

In particular, clearcutting as a timber harvest method meets with high public opposition. In some of these public forests, a significant amount of private timber has been clearcut in recent years, and much of the landscape has been significantly affected. Additional clearcutting on the interspersed public lands is both technically and politically questionable.

On some of the hardest-hit forest regions, such as the Blue Mountains of Eastern Oregon, intensive ecosystem evaluations have been done and forest restoration plans prepared. Those plans focus on restoring forest sites through a combination of practices designed specifically for each condition, including:

- * Removal of salvageable dead timber;
- * Thinning of green stands where needed;
- * Pruning of dead or lower limbs where needed to reduce the risk of ground fires climbing these "ladder fuels" into tree crowns, as well as to improve the ultimate quality of the wood produced;
- * Prescribed burning to reduce excessive fuels, break up large areas of wildfire-susceptible conditions, and create habitat diversity;
- * Removal or treatment of forest roads to reduce runoff, erosion, and sedimentation of streams, or to reduce human access into critical wildlife habitat or use patterns;
- * Restoration of ecosystem structure in riparian zones; and,
- * Tree planting in unregenerated or understocked stands.

Other public forest areas, such as eastern Washington and northern California, are currently undergoing similar study and plan preparation. Forests in Idaho have been most seriously affected at the southern, drier end of the state. On the Boise National Forest, for example, so much forest has been killed in recent years that all current timber sales are salvage of dead timber, and the workload is so extreme that it has not been possible to begin preventative work on stands that could be saved through effective treatment. Formal plans for treatment project needs have not been prepared on the Idaho forests, however.

Forest Health Projects Versus Timber Sales

A major factor in this policy proposal would be to replace, for a five-year test and transition period in the affected western forests, most or all of the normal timber sales with forest health treatment projects. These projects, while they could produce large amounts of merchantable timber, would be designed and implemented to achieve a more desirable forest condition, and to help managers facilitate the transition to ecosystem management on these sites.

A stewardship contracting approach, as described in the previous section, could be used to accomplish the necessary ecological restoration activities. The project plans would identify the forest treatment work needing to be done, and establish a bid basis to set fair market prices for carrying out the work. They would also estimate the type and amount of merchantable timber or other material likely to be produced during the treatment work, and establish a bid basis to set fair market prices for that material. A fair method of reimbursement, such as is currently used for purchaser-credit road building in timber sales, should be established which assures fair and equitable treatment for both the government and the contractor.

To remove the "spike" that these sales would put into payments to some counties during this transition period, payments to the states and counties should be stabilized for the transition period by taking a rolling average of the past 10 years of payments to each county, normalized for inflation, and making that the annual payment for the transition period, regardless of volume removed.

The contracts to implement these projects will almost certainly need to be multi-year in length, with final approval and payment to the contractor based on achievement of the end results agreed to in the stewardship contract. As opposed to straight sale of timber, these projects should be heavily based on effective performance. Many tasks, such as prescribed burning, depend on weather conditions that may or may not be available in a given year. Others, such as tree planting or riparian area restoration, may take 2-3 seasons to judge whether or not they have succeeded. Where it is in the contractor's financial interest for the project to succeed, as opposed

to simply "doing the work," it creates a significant difference in the type of performance, as well as the oversight costs of the administering agency.

Implementing the Policy

An Administration proposal for a five-year program should include the following elements:

- * Immediate funding to accelerate implementation of the Blue Mountains Restoration Project;
- * Start-up funding to begin implementation of the Eastern Washington and Sierra Forest Restoration Projects when plans have been completed and approved;
- * Funding to begin a forest health study and restoration proposal for Idaho public forests, with an intense public participation process similar to the Blue Mountains Restoration Study;
- * Streamlining the planning and implementation process by directing the agencies to prepare NEPA documents and carry out public participation processes with plans developed in sufficient detail at the landscape or ecosystem level to illustrate the end-results objectives desired in each affected ecosystem, then allowing project-level implementation of approved plans to proceed without further NEPA review or appeal;
- * Approval for all national forests in Washington, Oregon, California, and Idaho to utilize the multi-year stewardship contracting authority granted to 5 pilot forests in the FY93 appropriations bill for the Forest Service; and,
- * Pooling and dedication of all federal timber and salvage sale revenues in the affected region into support for the planning and implementation of forest health treatment projects on both NFS and BLM forest lands for the 5-year transition and test period.

In preparing plans for forest health treatment projects, federal land managers should be instructed to:

- * Place first priority on areas that need treatment which are located near population centers, which have road access, and where treatment can be less controversial, more quickly started, and more likely to help prevent disastrous impacts from wildfires or floods.
- * Utilize private consultants where needed to supplement agency technicians and accelerate the process of carrying out stand assessments and the development of treatment plans;
- * Develop monitoring plans that begin with, go through, and follow up each treatment project to provide information on the effectiveness of projects in reaching the end results sought; and
- * Utilize local organizations, non-profits, universities, or private consultants where appropriate in the monitoring program, both to gain the necessary staff and to broaden the public understanding and trust of the process.

Potential Impacts

1. The Blue Mountains Restoration Strategy

Implementation of the three-year strategy would result in, among other treatments:

Prescribed burning	355,000 acres
Biomass Removal	6,050 acres
Harvest	180,000 acres
Reforestation	90,000 acres
Estimated timber harvest:	200–267 million board feet per year
Estimated employment impact:	1,940–2,587 direct jobs 1,060–1,413 indirect jobs
Estimated costs:	\$247 million
Estimated returns:	\$100–200 million (These returns may be low, in light of current economic conditions. See below.)
Annual savings (wildfire suppression)	\$4.3 million/year (for 20 years)

2. The Northeastern Washington Restoration Strategy

Implementation of the forest health projects called for in the February, 1993, report would result in, among other treatments:

Prescribed burning	368,000 acres
Tree Density and Growth Management	65,346 acres
Harvest	110,750 acres
Reforestation	44,696 acres
Estimated timber harvest:	295 million board feet per year
Estimated employment impact:	2,865 direct jobs 1,565 indirect jobs
Income:	\$829 million (over 3 years) (See below.)
Annual savings (wildfire suppression):	\$1.7 million/year (for 20 years)

Short-term Economic Opportunity

The northwest timber market has been significantly impacted by market forces, including the reduction in old-growth timber harvest due to court injunctions, the export of logs, and the recovery in the housing market. Without entering the argument over why the current prices are high, or trying to predict how long such prices can last, it is evident that a short-term opportunity exists. That can be judged by looking at the Boise National Forest timber sales record for the past few months.

The Boise National Forest was hit by a large wildfire in the late summer of 1992. A major salvage sale program already under way due to huge areas of insect-, drought- and fire-killed forests was expanded to salvage as much merchantable timber as possible from the Foothills disaster. The resulting sales in FY 1993 have set new records for timber prices on the forest, with Ponderosa Pine going for \$622/thousand board feet in one sale. To date, the Boise has sold 139 million board feet for \$48,765,753, an average of \$350.56/thousand board feet across all species and grades. This represented almost a doubling of the timber staff's appraisal,

which totalled \$27.6 million for these timber values.

While the high prices received on these sales may be due in part to the Forest's alacrity in getting fire-killed timber onto the market before its value declined through decay, it must also be considered that the timber economy on the west coast played a major role. Several Oregon firms travelled to Boise to bid on these sales and, for the first time in history, two Oregon firms were successful bidders. Clearly, the effects of the Pacific Coast old-growth transition are being felt 400 miles or more inland.

While the high prices and demands for inland-west timber have been decried by some as "moving the problem to the east side," many see it as a major boon for forest management. To sell fire-killed, otherwise dead, or stressed timber at a price which can help offset the costs of needed forest improvements is an economic boon seldom, if ever, experienced by forest managers in this region. With no way to predict how long this level of demand and price will last, it seems only sensible to do everything possible to accelerate the execution of needed forest health improvement projects while the market is strong. In so doing, forests can be improved, jobs created, and economic health improved simultaneously.

For the forest-industry families and businesses on the western slope of the Cascades, a relocation to work in the forest health projects of the inland west may be traumatic and difficult. It seems less traumatic, however, than the total loss of economic opportunity, or the need to re-train into totally different areas of work. After the west-side old growth harvests have been proscribed, and the west-side second-growth opportunities captured, the inland forest health opportunities may provide an essential economic opportunity for many families and businesses. Capturing that opportunity through an intensive 5-year program of facilitating forest health project planning and implementation on federal forests of the region seems a very low-cost, high-payback policy option.

Compensating for impacts on federal payments to counties

As timber harvests on the west side of the Cascades in Oregon and Washington decline, so too will the federal revenue sharing with states and counties, currently calculated as a portion of federal timber receipts. In some counties in western Oregon, these revenue-sharing payments constitute more than two-thirds of the annual budget, and a sudden loss of this income would put county governments in dire financial straits, just at the time when local social services are in greatest demand. Any federal plan for easing the major economic transition taking place in timber-dependent communities in the Pacific Northwest must address the need of county governments for an adequate and reliable income from federal payments-in-lieu-of-taxes during this period.

One option that should be considered in the Administration's economic transition plan for the Pacific Northwest "owl region" is changing the formula by which the payments are determined from one based on a portion of timber receipts to one based on the area of non-taxable federal land in the county and the tax revenue it would generate in private ownership, regardless of the current or planned allocation and use of the federal land and resources. This could be accomplished gradually over a five-year transition period to minimize fluctuations or disruptions in this heavily relied upon source of local government income.

Background

Both the Forest Service and BLM pay a portion of their timber sale receipts to counties in which federal forest lands are located to compensate for the loss of property taxes that would be levied were these lands privately owned. Since 1908, the Forest Service has been paying 25

percent of receipts.¹² Later amendments made sure that the counties also received 25 percent of deposits, such as those made under the Knudson–Vandenberg Act, and of payments–in–kind, such as the value of roads constructed by timber purchasers. BLM returns 50 percent of receipts to counties in western Oregon where the O&C lands are located.

Congress added a payments–in–lieu–of–taxes program in 1976 to reimburse local governments for taxes on federal lands that produce few or no revenues. This law provides that local governments get the higher of seventy–five cents per acre reduced by revenue sharing payments, subject to a cap based on population, or a flat ten cents per acre. This means that national forest counties receive up to seventy–five cents per acre in addition to the regular 25 percent share of timber sales and other revenues.¹³

These payments are a significant source of income to western Oregon and western Washington counties. In 1991, a total of \$178 million was paid to local government in Oregon and Washington, the vast majority of it to counties west of the Cascades. In some rural counties, such as Douglas county in southwestern Oregon, these payments constitute two–thirds of the entire county budget.

A number of serious drawbacks have been recognized with this approach to determining federal payments to counties, including problems of distributional equity and obstacles to the sustainable management of forest ecosystems. More than two decades ago, the Public Land Law Review Commission determined that the pattern for sharing federal receipts with local government bears little relationship to the burdens imposed on them by the immunity of federal lands from taxation. In areas with high timber values, the federal government pays counties significantly more than they would receive if the lands were in private ownership. Conversely, federal lands with low timber values return significantly less to counties than they would in

¹² 16 U.S.C. 500.

¹³ Hagenstein, P., personal communication, March 15, 1993.

private ownership. This is illustrated in Table 1 with examples from the Willamette National Forest (Oregon), the Talladega (Alabama), and the White Mountain (New Hampshire) comparing the current payment structure with what tax revenues would be if the lands were in private ownership.

Table 1. Comparison of payments to counties from four national forests under the current formula against estimated tax revenue were these lands in private ownership

National Forest	Average receipt per acre	Payments per acre:			Local taxes per acre:			
		25% Fund	PILT	Total	Yield tax %	Amount	Land	Total
Willamette	119.80	29.95	.10	30.05	6.5	7.79	1.00	8.79
Talladega	8.80	2.20	.10	2.30	8.0	.70	1.00	1.70
White Mountain	3.00	.75	.10	.85	10.0	.30	1.00	1.30

Even within western Oregon alone there are significant distributional inequities in federal revenue sharing. On the Coos Bay Wagon Road lands, an area administered by BLM, the federal government has paid an average of less than \$6 per acre over the past ten years, based on an equivalency to private property tax and timber severance tax. During the same period, the Forest Service paid counties an average of about \$20 per acre of national forest land, and BLM paid more than \$40 per acre on the O&C lands.

This linkage between timber receipts and county payments has placed local governments in the position of pressing Congressional representatives to set annual federal timber sale targets at the highest possible level in order to maintain the level of federal payments and to minimize fluctuations in this income from one year to the next.¹⁴ Timber sale targets established in

¹⁴ Sample, V.A., "What's Really Driving National Forest Management," *American Forests*, January/February, 1989.

annual appropriations for the Forest Service and BLM have often exceeded those requested by the agencies themselves. In many cases, local governments are placed in a position of advocating for the short term what might be against the region's interests in the longer run. Local economies, like a portfolio of investments, are more stable and productive when they are based on a wide diversity of activities rather than just a few. This is especially true if one of the major local industries is inherently cyclical, highly sensitive to fluctuating interest rates, or locally on the decline.

Local governments west of the Cascades have recognized this, but have been unwilling to risk a drop in income from shifting to a different basis for payments-in-lieu-of-taxes. Indications have been clear for some time that the PNW would experience a major decline in timber supply beginning in the early 1990s. Economic studies as long ago as 1963 predicted a depletion of the region's old-growth timber volume during the 1990s, with significantly lower timber harvests for several subsequent decades until the youngest of the second growth timber reached merchantable size.¹⁵ The land and resource management plans developed for each national forest following the passage of the National Forest Management Act in 1976 called for a one-quarter reduction in allowable harvest levels from the 1980s to the year 2000. Various habitat conservation plans for the northern spotted owl have called for further reductions in the volume harvested from federal forest lands.

With federal timber sales almost certain to fall sharply from recent levels and remain relatively low for several decades, it is time to reevaluate the current approach. The counties affected by habitat conservation plans for the northern spotted owl are under a temporary legislative arrangement which maintains payments at average for 1986-1990, a period of both high timber harvest levels and high timber prices. The current arrangement expires at the end of FY 1995, however, and a longer term solution will be needed.

¹⁵ See Sample, V. and Le Master, D., *Assessing the Employment Impacts of Protecting Habitat for the Northern Spotted Owl* (Washington, DC: American Forestry Association, 1992).

Determining federal payments to counties on the basis of land area

The economic transition plan for the Pacific Northwest should include a provision for maintaining federal payments to the affected counties at no less than a ten-year rolling average, county by county, during the next five years, after which payments would be based on the area of national forest land in the county and equivalent to what would be expected if the lands were in private ownership.

A rolling ten-year average would extend the basis for calculation back to the mid-1980s, a period of record high federal timber harvests and receipts. During the five-year economic transition period, this would maintain payments to counties at a significantly higher level than could be expected under either the existing timber receipts formula or a formula based on private tax equivalency. In addition, the level of payments would become far more stable and predictable (Figure 1 and Appendix A), simplifying local government budgeting and facilitating better long-term planning for capital investments in schools, roads, and other local public works projects. Any significant change in payments associated with the shift to a tax equivalency basis would take place gradually, providing time for adjustment in local government budgeting and providing substantial additional income to the counties during the economic transition. The rolling average would be calculated on a county-by-county basis.

At the end of the five-year economic transition period, the formula for determining federal payments-in-lieu-of-taxes would revert to an equivalent to the combination of property and timber severance taxes levied on private forest landowners in the county. A precedent for this approach exists on BLM's Coos Bay Wagon Road (CBWR) lands in southwestern Oregon. The assessed value of forest land for property tax is a function of the price of second-growth Douglas-fir stumpage over the previous three-year period. Severance tax is 6.5 percent of the value of the timber harvested. Between 1984 and 1988, the CBWR lands in Roseburg County,

Oregon yielded \$59,935 in severance tax and \$18,321 in property tax annually for 13,924 acres.¹⁶

Since perhaps a third of the payment is based on federal land acreage in the county, independent of the land allocation or resource use, such an approach could be expected to significantly reduce the pressure on federal forest managers to keep timber harvests high simply to maintain steady payments to local government. However, if the severance tax component is perceived as based on the amount of timber harvested the difficulties associated with the linkage between federal timber harvest levels and federal revenue sharing may not be eliminated.

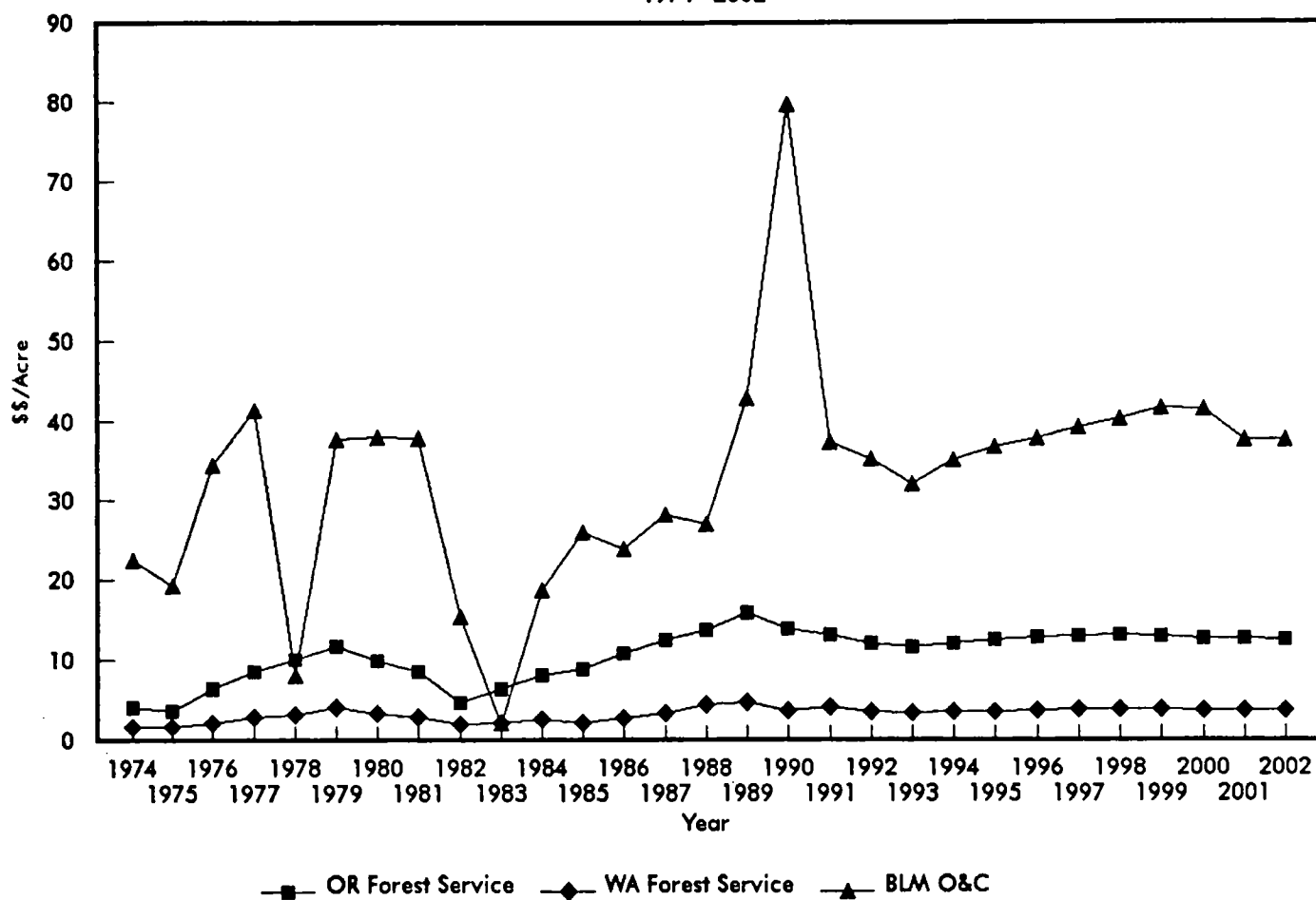
One alternative approach is a strict per acre payment, at a rate mutually agreed upon by the federal agency and county government involved, and renegotiated on a five year basis. If care is not exercised, this approach could have a tendency to be applied like an *ad valorem* tax. *Ad valorem* taxes have been replaced with severance taxes in many states precisely because they were seen as forcing forest landowners to harvest timber prematurely. Because timber growth increased property value over time, the *ad valorem* tax creeps upward as well, with no current income to the landowner to offset the increases tax. The response of private landowners has been to harvest the timber as soon as possible to gain income to offset the taxes and to reduce property value. If this sort of approach were taken on federal forest lands, whether intentionally or not, it could bring a different sort of pressure to harvest, and could interfere with federal agencies' attempts to adopt long-rotation management strategies consistent with providing more late-successional forest habitat.

Legislative direction to adopt a land area basis for the calculation of payments-in-lieu-of-taxes would have to provide that the value of standing timber not be a component in the calculation, the value of these intact forest ecosystems accruing to the local government and citizens in other ways, including watershed protection, fish and wildlife habitat, and opportunities

¹⁶ *Draft Resource Management Plan for the Roseburg District* (Portland, OR: Bureau of Land Management, 1992)

for recreation and tourism. One possibility that deserves further discussion and analysis is to calculate federal payments on the equivalent of a land tax based on current use valuation. Current use valuation has been used successfully by many state and local governments to reduce the pressure on private landowners to shift land use toward development in order to escape a growing tax burden. It has been useful in allowing owners to manage forest lands for conservation purposes, including long-rotation management aimed at watershed protection and habitat for wildlife needing late-successional forest ecosystems. Payments should be consistent with current use valuation assessments used on private lands in the county.

Figure 1 — Payments to Counties/Acre in Owl Region of OR & WA
1974–2002



1993–2002 calculated by 10-yr. avg. of previous decade

Private Land Relationships in Forest Ecosystem Management

To resolve the current controversies over endangered-species habitat protection, and to avoid such acute ecological and socioeconomic difficulties in the future, we must look beyond the traditional single-species approach to biodiversity conservation and begin focusing on the sustainable management of forest ecosystems. In most regions of the United States, including the Pacific Northwest, the delineation of ecologically important, landscape-scale ecosystems encompasses both public and private lands, often interspersed with one another. An effective forest ecosystem management strategy for the Pacific Northwest will recognize the important role that private lands can play in complementing and supplementing ecosystem management on adjacent public forest lands, but it must also recognize and accommodate the appropriate economic and other goals and objectives on private lands.

Public forest lands constitute only a small portion of the total forest land base, and are not sufficient in themselves to adequately protect biodiversity in forest ecosystems. Nationally, federal and state lands constitute about 20 percent of the total forest land base. Of the remaining 80 percent that is privately held, 20 percent is industrial forest land and the remaining 60 percent is held by non-industrial private owners, such as farmers. In Oregon and Washington, 43 percent of the forest land is privately owned, 25 percent by corporations and 18 percent by non-industrial private owners.¹⁷ Even in the Pacific Northwest, where ownerships tend to be larger and more contiguous than in many regions of the country, the delineation of ecosystems along watershed or other ecological boundaries will nearly always encompass an intermingled mixture of public

¹⁷ Wadell, K, D. Oswald, and D. Powell, *Forest Statistics for the United States, 1987*, Resource Bulletin PNW-RB-168 (Portland, OR: USDA Forest Service, Pacific Northwest Research Station, 1989).

and private forest lands. This intermingling, combined with the fact that the vast majority of forest land is in private ownership, means that private lands have a critical role to play in any ecosystem-based strategy to protect biological diversity, water quality, and many other natural values, whether just for the Pacific Northwest "owl region" or for the United States as a whole.

Private forest landowners have a variety of different goals, usually including economic objectives. Often there are opportunities for private owners to better understand and protect biodiversity values without materially interfering with their primary economic objectives for owning and managing their forest land. Private timberlands have unique roles and responsibilities, distinct from public forests. Appropriate economic objectives, such as profitably growing and producing timber on a commercial basis, are pursued while fulfilling environmental obligations described in both federal and state laws and regulations.

As the importance of protecting biological diversity in temperate U.S. forest ecosystems has become evident, many companies have voluntarily sought the advice of ecologists and other scientists to better understand and protect biodiversity values on private lands. During 1992, more than 50 private corporations, including several of the largest forest products companies in the United States, submitted biodiversity conservation proposals for endorsement by the President's Commission on Environmental Quality (PCEQ).¹⁸ The proposals were reviewed by a task force on biodiversity on private lands, measured against exacting criteria, and many of them approved. As company officials came to better understand what biodiversity values existed on their lands, many found that a great deal could be done to protect these values without materially interfering with the primary economic objectives for owning and managing the land. These efforts, supported entirely by the companies' own funds, are continuing today in many parts of the country.

¹⁸ *Report of the President's Commission on Environmental Quality* (Washington, DC: Council on Environmental Quality, 1993).

But private forest landowners are also recognizing the importance of coordination across ownership boundaries, with adjacent public as well as private landowners, to an integrated ecosystem-based approach to forest management. It is in everyone's interest to move beyond the current species-by-species approach to biodiversity conservation--resolving the spotted owl controversy will mean little if the failure to protect habitat at the ecosystem level results in a continuation of endangered species listings.

Representatives of forest products companies in the Pacific Northwest have stated their commitment to ecosystem management on public forest lands.¹⁹ There are opportunities for adjacent private lands to complement and supplement the achievement of ecosystem management on public forest lands through new approaches that deal collectively with groups of species and habitats. Private landowners have identified a number of actions they believe clarify the appropriate role of private forest lands in managing the forest ecosystems of the Pacific Northwest:

Protecting riparian areas and wetlands

Private forest landowners have the responsibility for managing riparian areas and wetlands to provide for water quality, fish habitat, and associated wildlife values. Management objectives may include: provision of shade and large organic debris for streams, increasing the conifer component on riparian areas, assessing and monitoring the effectiveness of current regulations, and cooperating with adjacent landowners to achieve desired riparian conditions.

Providing habitat for early and mid-successional species

Private forest landowners will provide habitat for early successional species in conjunction with their primary operation goal of sustainable timber production. In addition, through silvicultural treatments designed to create and retain structures (large trees, snags, and

¹⁹ Statement of Jim Geisinger, President, Northwest Forestry Association to the President's Forest Conference, Portland, Oregon, April 2, 1993.

down logs) and diverse vegetative conditions, they will provide for many mid-successional species (those that depend on the above structures) and some late-successional species (those that require structural attributes or features of old forest stands).

Assisting public land managers in meeting their responsibilities for late successional ecosystems.

While the protection of late-successional ecosystems and species is primarily the responsibility of public land managers, it is appropriate and desirable for private forest landowners to cooperate, where practical, in meeting these objectives. For example, private landowners might complement public obligations by providing owl dispersal habitat, participating in land trades or sales critical to conservation programs, and working within incentive and/or compensation programs that encourage protection of late-successional species.

Maintaining site productivity.

Private forest landowners will maintain the basic productive capacity of their lands, with particular reference to soil properties. This may be accomplished through such measures as minimizing soil disturbance and compaction, improving road construction and maintenance, and identifying and protecting fragile soils.²⁰

However, private forest landowners currently face some substantial disincentives for participating in a cooperative approach to forest ecosystem management.

- * Log shortages from reduced federal timber sales and price escalation have encouraged premature harvest, particularly on small non-industrial holdings.

²⁰ Smith, Gordon and Kohm, Katherine, *The Role of Industrial Forestlands in the Management of Western Washington's Forest Ecosystems*. Discussion Paper. (Seattle, WA: Olympic Natural Resources Center, University of Washington, 1993).

- * Uncertainty in both federal and state forest regulation has discouraged holding forest lands for long-term forestry purposes.
- * Forest improvements are often being deferred for fear that investment returns will not be realized due to future harvest restrictions.
- * Productive forest lands are being converted to other land uses due to urban encroachment which may limit its ultimate use.
- * Coordination across landscapes among corporate private forest landowners may be viewed as antitrust violations.
- * The 1990 Farm Bill offers valuable incentives to non-industrial private landowners for stewardship practices, but uneven application by the states under individual state forest practices acts has penalized private owners and resulted in assistance being denied.

Change is essential if we are to achieve harmonious protection and sustainable management of our forest ecosystems. Continuing to focus on the stand level, single species and jurisdiction in isolation can only intensify the crisis. It is time to look at broad ecosystems in a collaborative approach with all forest landowners. By restoring and maintaining biological diversity on a broad ecosystem basis, it is possible to achieve harmonious environmental protection and sustainable use of our forest resources. Among the specific policy opportunities for accomplishing this:

1. Develop a multi-agency/party Regional Strategy for Biodiversity and Ecosystem Management based on the bioregion (OR, WA and Northern CA), landscape/watershed, and stand levels. Parties should be the three states and their applicable agencies and the affected Federal agencies with private landowners participating as signatories or associates.
2. Develop non-regulatory approaches to facilitate the coordination across jurisdictional boundaries in inventory, monitoring, planning and management decision making. These

might include programs to encourage private voluntary efforts and the development of market-based economic incentives. Consider changes in federal financial and tax incentives. Coordinated Resource Management Plans (CRMP), such as Ecosystem Management Agreements, could be developed jointly among landowners within an ecosystem planning area to coordinate management strategies and action plans. Incentives could be built in where landowner objectives are compromised.

3. Adopt funding reform for Federal forestry investments. Include incentives on private land for public values not reflected in the market place. Public forests should be funded on a stewardship basis with product flows a result.
4. Facilitate the development and application of collaborative decision making and information gathering (remote sensing and GIS). This process is best articulated in the recent report of the Blue Ribbon Panel on Forest Inventory and Analysis.²¹
5. Avoid prescriptive legislation. Clearly articulate principles, goals, and objectives, then create a policy and regulatory environment conducive to the development of innovative local solutions to local situations.
6. Respect the goals and objectives of individual landowners. Production on non-market values by private landowners should be voluntary, encourage and facilitated by incentive or compensation, not by regulation.
7. Strengthen the capability and commitment of private, public and academic institutions to the development of a more complete knowledge base to guide the task of understanding and implementing ecosystem management.

²¹ *Report of the Blue Ribbon Panel on Forest Inventory and Analysis* (Washington, DC: American Forest and Paper Association, 1992).

8. **Build community and public support through education and participation in decision making. Human communities, local economies and private property are important considerations along with healthy and sustainable ecosystems.**

Private forest lands can and must play an important role in any overall strategy to protect and sustainably manage habitat for the northern spotted owl and other late-successional forest species in the Pacific Northwest and throughout the country. There is a new understanding and a new willingness among private forest landowners to play a complementary and supplemental supporting role to the protection of biological diversity and other ecological values on adjacent public lands. Currently there are a number of important disincentives for closer cooperation among adjacent public and private forest landowners. It is important to identify these disincentives and eliminate them to the extent possible while not undercutting the economic purposes for which private organizations and individuals own and manage their forest land.

Interactive Use of GIS Technology to Prioritize Late-Successional Forests of Greatest Ecological Value

Though all the remaining areas of old-growth forest in the Pacific Northwest are important, not all are of *equal* importance to the survival of the northern spotted owl and associated species characteristic of late-successional forest ecosystems. In the event that the political compromise that is reached in this issue calls for some level of continued harvesting in old-growth forests during an economic transition period, it is only prudent to be prepared with the best available scientific information showing which of these areas is most critical, and which areas harvesting should be directed towards if harvesting is to take place. Recent rapid advances in remote-sensing and geographic information (GIS) technology have made possible the development of better ecological information on the extent, location, and nature of PNW old-growth forests than has ever been available before. The detailed ecological information, in combination with the technological capability to analyze it and display it according to a variety of different ecological criteria, afford a powerful tool for prioritizing the remaining old-growth to ensure that the most valuable areas are known.

Background

What remains of the old-growth forest in the Pacific Northwest is but a fraction of what it was only a century ago. As our understanding of the ecological functioning of these forests improves, it is becoming increasingly clear how important they are to the viability of late-successional forest species including--but not limited to--the northern spotted owl.

The most comprehensive and authoritative prioritization of Pacific Northwest old-growth was conducted by the Scientific Panel on Late-Successional Forest Ecosystems (the "Gang of

Four"). With the help of a host of scientists and resource managers, the Scientific Panel took the latest available maps of "potential old-growth" prepared from LandsatTM satellite photos and hand-drew boundaries delineating the "most ecologically significant" (LS/OG1) from the "ecologically significant" (LS/OG2), and the "remainder" (LS/OG3).

The mapping focused on larger aggregations of late-successional forest stands suitable as management units for old-growth reserves rather than small individual patches. This means that some areas of younger forest and cutover areas are included in areas mapped as late-successional forest.²² It was assumed that young stands within the old-growth reserves would eventually mature and fill in these openings. On the other hand, this approach left many small sections of old-growth outside the boundaries of the proposed reserves and thus not recommended for protection under the interim plan. Collectively, these small sections represent thousands of acres of old-growth. It should also be noted that the mapping was done "to support the development of *interim* proposals for reserves which would maintain options for a longer term solution." It was thus a conservative estimate that may hold additional flexibility upon closer analysis. Since the release of the Scientific Panel's report in October 1991, much additional work has gone into the maps to assure better mapping precision and to check maps against conditions on the ground.

GIS for landscape-scale ecosystem analysis and consensus-building

In the development of the Administration's proposal for protecting late-successional and old-growth habitat for the spotted owl and other species, it will be important for ecologists, resource managers, policymakers, and concerned citizens to be able to determine the effects of imposing certain ecological or economic criteria, and to propose new alternatives as other opportunities become evident.

²² Johnson, K.N., J.F. Franklin, J.W. Thomas, and J. Gordon, *Alternatives for Management of Late-Successional Forests of the Pacific Northwest*, The Report of the Scientific Panel on Late-Successional Forest Ecosystems, October 8, 1991, p. 2.

For example, the total acreage mapped as old-growth is only part of what needs to be evaluated. It is critically important that the ecological condition of these stands be known as well. Reserves proposed in land and resource management plans prepared by the Forest Service and BLM were often in small or narrow blocks which, though they might serve other environmental or aesthetic needs, did not effectively maintain old-growth ecological characteristics and conditions. The relationship of federal forests to forests on adjacent state and private lands will influence the effectiveness of the federal forest lands as late-successional habitat. The age and structure of adjacent non-federal forests, now and in the foreseeable future, will have a major effect on whether areas of federal forest should be classified as top priority for reserves.

Recent advances in remote-sensing/GIS technology, and improved documentation of the ecological data for Pacific Northwest forests, provide a tool with which key scientists and decision makers can interact with one another in "real time" to test assumptions, explore new alternatives, and perhaps arrive at a solution that was not evident before. The map of remaining areas of old-growth, and their priorities relative to one another, can change drastically depending on the ecological assumptions imposed, such as buffer width and minimum critical habitat size. Environmental conditions along the edges of old-growth areas surrounded by cutover lands may be significantly altered several hundred feet into the old-growth stand, meaning that unmodified interior forest conditions exist only in a "core area" substantially smaller than the total area of old-growth. In some cases, the total area of old-growth may meet the minimum critical habitat size, but fail to do so when this "edge effect" is taken into account.

An example of the kind of interactive analysis that can be done in "real time" is the testing of various assumptions concerning the minimum width of buffers that consider this edge effect. Old-growth areas that are fairly contiguous and well connected assuming a 200-foot buffer may show up as small islands incapable of supporting viable populations when it is assumed that a 300-foot buffer is needed.

In searching for an optimal compromise between what is ecologically possible and what is economically, socially, and politically possible a great deal of give and take will occur. This can be done with the key interests together and interacting with one another, with old-growth maps being redrawn on a screen before them to show the effect of each new proposal or assumption.

In order to utilize this new tool effectively, it will be necessary to get all of the information in place and clearly define the major alternatives.

- * The players will need to specify the variables of interest, such as: What are the current conditions and what impacts need to be measured over what time period? What constraints should be placed on the landscape?
- * Alternatives must be specified, and the range of alternatives must be significant if the analysis is to have any meaning?
- * Data layers must already be prepared showing key criteria for analysis of the alternatives: ownership, administrative boundaries, slope, aspect, elevation, hydrology, historical vegetation, and fragmentation, to name a few.
- * The next step is to work with decision makers to interactively build models which simulate change (from present conditions) over time under different alternatives.
- * The final step is to connect changes in the landscape to changes in habitat and to changes in the economy. This will provide the primary basis for analysis of the tradeoffs among the alternatives.

This approach to analysis is critical to finding a solution that maximizes the probability of long-term viable populations of late-successional forest species while minimizing the negative

impacts on timber-dependent communities and the regional economy of the Pacific Northwest. The politics will still not be easy, but it is entirely plausible that the effective utilization of GIS technology and the best available data on the ecological classification of Pacific Northwest forests in a setting that allows open and direct interaction among the major stakeholders may uncover alternatives that are as yet unknown and untried. And one of those alternatives may be something very close to the optimal compromise that all are seeking. This should be an explicit component of the Administration's plan, and sufficient funds and other resources should be made available to ensure its success.

Elimination of Log Export Subsidies: Effects on Timber Supply and Employment

The export of unprocessed logs from the Pacific Northwest is currently subsidized by the federal government through an income tax break of as much as 15 percent on the profits from exports through approved Foreign Sales Corporations. Elimination of this subsidy could change the economics of decisions by log sellers, resulting in a substantial portion of these log exports being routed to the domestic market and helping to alleviate the current timber supply shortage in western Oregon and western Washington. Current price trends suggest that this change in federal tax policy could bring at least 250 million board feet of logs back into the PNW regional economy, maintaining at least 1,000 jobs in the forest products and related industries.

Background

To encourage the export of American goods and services, the U.S. federal tax code provides for a reduced income tax rate on profits from export sales to wholly-owned foreign subsidiaries of American companies, known as Foreign Sales Corporations (FSCs).²³ In December 1984, the FSC replaced the Domestic International Sales Corporation (DISC) as the U.S. Government's primary tax incentive for U.S. exports. Congress passed the FSC legislation in response to objections raised by some of our foreign trading partners that the DISC rules created an illegal export subsidy under the General Agreement on Tariffs and Trade (GATT). The tax incentive provided by the FSC legislation is in the form of a permanent exemption from

²³ Taxation on Foreign Sales Corporations, 26 U.S.C. §§ 991-996 (1988).

federal income tax for up to 15 percent of the gross income from exports.²⁴ An exemption of 15 percent of gross income is equivalent to a reduction in the corporate income tax rate from 35 percent to slightly less than 29 percent.

The question of log exports has loomed large in the debate over how to mitigate the impact of preserving old-growth forest habitat on timber-dependent communities. Until recently, more than 3 billion board feet (BBF) of unprocessed logs were exported annually from Oregon and Washington, mostly to Japan, China, and Korea.²⁵ The tightening of laws prohibiting the export of logs from federal lands and new restrictions on the export of logs from state lands have reduced this to approximately 2.2 BBF in 1992.²⁶ To many, prohibiting the export of these basic raw material resources has seemed like the natural solution to several problems. It would route a major source of timber supply back to domestic mills, offsetting at least some portion of the impact of old-growth set-asides. It would employ American workers in the processing of valued-added goods for export, improving the balance of trade with our Asian trading partners.²⁷

But a blanket prohibition of log exports from private lands also raises a host of complex economic and legal questions, not the least of which relate to restraint of trade and the attenuation of private property rights. Eliminating the FSC subsidy for the export of unprocessed logs only (i.e., not affecting exports of lumber, paper, or other wood products) avoids many of

²⁴ Goldstein, M. and Aronoff, A., *Foreign Sales Corporations Tax Incentive for U.S. Exporters* (Washington, DC: U.S. Department of Commerce, 1988).

²⁵ Warren, D., *Production, Prices, Employment and Trade in Northwest Forest Industries* (Portland, OR: USDA Forest Service, Pacific Northwest Research Station, 1993).

²⁶ A recent decision by the U.S. Ninth Circuit Court of Appeals found that the federal restriction of log exports by state government is a violation of states' rights, so exports from state lands can be expected to increase from current levels. See: *Board of Natural Resources of the State of Washington, et al. v. Brown*, U.S. Court of Appeals, 9th Cir., May 4, 1993.

²⁷ Letter from the Honorable Peter A. DeFazio to President George Bush, April 12, 1989.

these issues. It does not restrain private log sellers from selling to whoever offers the highest price; it merely eliminates the additional financial incentive, currently estimated to cost taxpayers approximately \$100 million annually,²⁸ that induces private owners to sell their logs to foreign purchasers rather than to their neighbors.

Impact of log export subsidies on domestic timber purchasers

Under the current system, federal tax policy encourages a log seller to sell to the export market even if domestic mills are willing to offer the same price as foreign buyers. A 5 percent reduction in the corporate income tax rate for profits on exported logs, i.e., from 34 percent to 29 percent, means that a domestic purchaser would have to offer the seller a price more than 7.5 percent higher than the foreign buyer for the seller to be indifferent between the two.

In 1992, the average price for softwood sawlogs exported to China was approximately \$500 per thousand board feet (MBF).²⁹ With the FSC subsidy, the after-tax profit to the log seller would be about \$355/MBF. For the log seller to receive the same after-tax profit selling to a domestic purchaser, the purchaser would have to offer at least \$538/MBF. In other words, a domestic purchaser would have to offer a price more than 7 percent higher than a foreign purchaser in order to compete for the same log. In a highly competitive commodity market, this puts the domestic purchasers at a distinct disadvantage, as a matter of federal policy.

For the highest quality logs, the export premium is so large that an elimination of the FSC subsidy is unlikely to make a significant difference in log seller decisions on who to sell their logs to. In 1992, the average value of softwood sawlogs exported to Japan was \$748/MBF, about \$250 more per MBF than the average domestic price. These are not the same kinds of logs, however. They tend to be of larger diameter, finer grain, with fewer knots, taper, sweep, or other

²⁸ Letter from Joint Committee on Taxation, U.S. House of Representatives to the Honorable Fortney Stark, February 6, 1992.

²⁹ Warren, 1993. *Op. cit.*

defects. For fine products such as furniture, moldings, and other millwork, domestic purchasers pay the export price and get the same high-quality logs as purchased by Japan. With an export premium of 50 percent or more, a 7 percent FSC subsidy has little influence over the log seller's decision to sell to the export market, and the elimination of the subsidy is unlikely to change those decisions.

However, about a quarter of the logs exported to the Far East are similar in quality to what is purchased by domestic mills. For these logs there is little or no export premium and the prices between the foreign and domestic markets are very competitive. In 1992, a total of 500.8 MMBF in softwood sawlogs was exported to Korea and China, with a total value of \$244 million. The average price for the timber exported to China was \$500/MBF, and to Korea \$477/MBF. During the same period, domestic prices for comparable grade (#2) Douglas-fir sawlogs averaged \$475/MBF in western Washington and \$539/MBF in western Oregon.³⁰ Export prices have risen substantially during the past five years, but domestic prices have risen even faster, substantially closing the gap between export and domestic prices for average-quality softwood sawlogs.

Timber supply and employment effects of eliminating the log export subsidy

Elimination of the FSC subsidy would put domestic purchasers on an even footing with foreign buyers, and could result in a substantial portion of these average-quality logs staying in the domestic market. As described above, equivalent prices between the export and domestic markets would still result in a financial decision by the log seller to sell to the foreign buyer. A domestic purchaser would have to offer a significantly higher price in order for the log seller to receive the same after-tax income. While there may be good reasons for the federal government to not interfere with the free export of private goods, a federal policy that places domestic purchasers at a distinct competitive disadvantage, and uses taxpayer dollars to put needed raw materials further out of reach for Pacific Northwest mills is not in the public interest,

³⁰ *Log Lines*, Arbor-Pacific Forestry Services, Mount Vernon, WA, 1993.

for the American people generally and for the people of the Pacific Northwest in particular.

Adding a substantial portion of this 500 MMBF back to the PNW regional timber supply could sustain at least 1,000 jobs in the Pacific Northwest region. If by eliminating the FSC subsidy 250 MMBF of domestic-quality logs--half of what is now exported to Korea and China and less than one eighth of the total volume of softwood sawlogs currently being exported from Oregon and Washington--can be retained for processing by Pacific Northwest mills, it could help sustain more than 650 additional direct jobs in forest-products and related industries and an additional 350 jobs in indirect/induced employment--jobs that would otherwise be lost as the regional timber supply continues to decline.

Economists at the Forest Service and elsewhere have estimated that every million board feet of timber harvested generates approximately 9.3 jobs/MMBF are generated directly in the forest products industry.³¹ An additional 5.7 jobs/MMBF is generated through indirect and induced employment.³² About 73 percent of this employment is generated by timber harvesting and would occur whether the logs were subsequently exported or milled domestically. Thus, the domestic milling of logs that otherwise would be exported generates approximately 4.0 jobs/MMBF in direct, indirect, and induced employment--about 1,000 total jobs from the additional 250 MMBF/year. This might be offset to some extent by the tradeoff of export-related employment and the indirect and induced jobs it represents.

³¹ USDA Forest Service, *Economic Effects of Critical Habitat Areas on the National Forests, An Update of the June 5, 1991 Analysis* (Washington, DC: USDA Forest Service, October 1991).

³² *Direct* employment includes both primary and secondary wood processing. Primary wood processing consists of logging, lumber production, plywood production, and the manufacture of pulp and paper. Secondary wood processing is the manufacturing of finished goods (e.g., furniture, millwork). *Indirect* employment generally consists of activities servicing the timber industry, such as transportation, marketing, and equipment sales/maintenance. *Induced* employment involves providing goods and services purchased with wages, taxes, and other forms of income derived from the forest products industry by individuals and government, ranging from local government employees to employees of the local bank or grocer.

A bill currently under consideration in the House, H.R. 1542, proposes to eliminate the FSC subsidy for log exports while retaining the original intent of the FSC for all other exports, including lumber, panels, and other wood and paper products. This approach would do away with a subsidy that is not needed and that works at cross purposes with efforts to mitigate the economic impact of reduced timber supply on the economic health and welfare of communities in western Oregon and western Washington.

One further consideration is for federal policymakers to take the estimated \$100 million annually that now underwrites the log export subsidy, along with some portion of the federal income tax windfall associated with the recent steep rise in timber prices in the Pacific Northwest, and invest it in economic transition assistance aimed at developing a sustainable regional economy that is ecologically sound, economically viable, and socially responsible.

Appendix A:

Federal payments to counties in Washington and Oregon, 1974–1992, with projections to 2002 based on a ten-year rolling average (by total payments and per-acre equivalent).

Average per acre Oregon and Washington payments to
counties 1972-1992 with projections to 2002 based on
10-year rolling average (1991-2 adjusted for
spotted owl guarantees)

	O&C	OR FS	WA FS	OR&WA PS
1972	14.67			
1973	18.38	4.29		
1974	22.51	4.02	1.69	
1975	19.22	3.52	1.58	2.51
1976	34.55	6.34	2.04	4.10
1977	41.31	8.49	2.86	5.55
1978	8.00	9.96	3.09	6.38
1979	37.70	11.73	4.00	7.70
1980	38.02	9.89	3.32	6.46
1981	37.77	8.43	2.90	5.54
1982	15.31	4.63	1.88	3.20
1983	2.00	6.36	2.05	4.11
1984	18.61	7.99	2.50	5.12
1985	25.91	8.81	2.12	5.32
1986	23.81	10.73	2.70	6.54
1987	28.20	12.36	3.29	7.63
1988	27.00	13.68	4.43	8.85
1989	42.79	15.83	4.71	10.03
1990	79.68	13.86	3.66	8.54
1991	37.44	13.03	4.03	8.33
1992	35.31	12.04	3.41	7.54
1993	32.07	11.47	3.29	7.20
1994	35.08	11.98	3.41	7.51
1995	36.73	12.38	3.50	7.75
1996	37.81	12.74	3.64	7.99
1997	39.21	12.94	3.74	8.14
1998	40.31	12.99	3.78	8.19
1999	41.64	12.93	3.72	8.12
2000	41.53	12.64	3.62	7.93
2001	37.71	12.51	3.62	7.87
2002	37.74	12.46	3.57	7.82

Source: USDA Forest Service and USDI Bureau of Land
Management

Table A.1-Forest Service 25% payments to counties 1973-1992, with projections to 2002 based on 10-year rolling average

(1991-2 adjusted for spotted owl guarantees)

County/ Acre	Clackamas (510424)		Curry (559739)		Douglas (904993)		Jackson (402380)		Josephine (296170)		Lane (1334031)		Linn (466332)		Multnomah (76423)		Tillamook (91223)		Yamhill (25500)		Total (8409429)
	Benton (16310)	Coos (57939)	Deschutes (980193)		Hood R. (212637)		Jefferson (164996)		Klamath (1722703)		Lincoln (171651)		Marion (204117)		Polk (318)		Wasco (211350)				
in million dollars																					
1973	0.16	2.56	0.24	1.81	1.02	5.59	1.07	1.55	0.20	0.97	2.45	9.68	1.65	3.23	1.30	0.36	0.00	0.89	1.05	0.25	36.04
1974	0.14	2.65	0.23	1.80	1.75	3.78	1.10	1.28	0.32	0.96	2.91	8.72	1.44	3.03	1.25	0.37	0.00	0.78	1.08	0.22	33.83
1975	0.11	1.97	0.20	1.60	1.03	4.82	0.82	1.28	0.19	0.86	2.00	7.91	1.14	2.76	1.08	0.28	0.00	0.62	0.80	0.17	29.64
1976	0.22	3.64	0.39	3.03	2.77	7.62	1.52	1.97	0.50	1.60	4.14	13.69	2.27	4.63	1.86	0.52	0.00	1.23	1.49	0.27	53.35
1977	0.31	3.72	0.48	3.45	3.69	9.31	1.55	2.97	0.65	1.85	5.67	20.75	3.22	7.28	2.61	0.53	0.01	1.75	1.52	0.07	71.36
1978	0.36	4.07	0.62	4.65	3.38	12.82	1.69	4.27	0.60	2.51	7.65	22.36	3.77	7.46	2.71	0.58	0.01	2.04	1.66	0.56	83.78
1979	0.39	5.39	0.78	6.28	4.41	14.98	2.24	5.27	0.78	3.37	9.86	24.09	4.05	7.97	3.03	0.76	0.01	2.20	2.20	0.61	98.66
1980	0.32	7.05	0.53	3.86	3.08	10.35	2.94	3.43	0.58	2.08	7.80	21.20	3.35	7.34	3.08	1.00	0.01	1.81	2.88	0.50	83.19
1981	0.36	5.59	0.48	3.05	4.64	9.70	2.33	4.38	0.82	1.71	6.58	13.06	3.73	6.26	2.57	0.79	0.01	2.02	2.28	0.56	70.91
1982	0.14	2.26	0.18	1.01	2.22	6.41	0.94	1.76	0.39	0.58	2.90	11.03	1.52	3.90	1.43	0.32	0.00	0.82	0.92	0.23	38.97
1983	0.19	3.67	0.27	1.71	4.53	6.65	1.53	3.91	0.78	1.02	7.57	9.56	2.30	4.59	1.82	0.52	0.00	1.08	1.50	0.30	53.50
1984	0.27	4.01	0.34	2.05	5.10	10.55	1.67	2.77	0.88	1.14	9.89	14.97	2.80	4.69	1.90	0.57	0.01	1.51	1.64	0.42	67.16
1985	0.28	3.46	0.46	3.35	5.02	9.53	1.44	4.18	0.86	1.85	10.22	18.15	2.89	6.24	2.28	0.49	0.01	1.57	1.41	0.43	74.10
1986	0.39	5.44	0.55	3.50	4.84	11.74	2.27	4.58	0.85	1.94	11.75	22.29	4.10	7.30	2.85	0.77	0.01	2.20	2.22	0.61	90.19
1987	0.35	5.38	0.58	4.13	4.44	18.99	2.24	5.47	0.78	2.29	13.04	25.34	3.70	8.52	3.20	0.77	0.01	1.99	2.20	0.55	103.97
1988	0.48	6.70	0.73	4.90	3.55	16.09	2.79	5.48	0.65	2.68	15.61	29.46	5.06	9.87	3.77	0.97	0.01	2.72	2.74	0.75	115.01
1989	0.53	6.27	0.89	6.42	3.20	22.82	2.60	6.40	0.59	3.48	16.83	34.56	5.56	11.49	4.18	0.91	0.01	2.99	2.58	0.83	133.14
1990	0.34	6.12	0.62	4.67	4.18	24.28	2.54	4.46	0.75	2.52	13.30	29.50	3.57	10.13	3.76	0.89	0.01	1.92	2.52	0.53	116.60
1991	0.41	5.94	0.67	4.80	3.28	18.89	2.47	4.97	0.60	2.60	13.31	28.19	4.26	9.41	3.53	0.89	0.01	2.29	2.45	0.63	109.60
1992	0.38	5.36	0.61	4.25	3.64	16.84	2.23	4.82	0.65	2.32	13.23	25.54	3.97	8.48	3.18	0.80	0.01	2.11	2.22	0.59	101.22
1993	0.36	5.23	0.57	3.98	4.18	15.64	2.18	4.70	0.74	2.18	12.48	23.76	3.82	8.07	3.05	0.76	0.01	2.04	2.15	0.56	96.45
1994	0.38	5.39	0.60	4.20	4.14	16.54	2.24	4.78	0.74	2.30	12.97	25.18	3.97	8.42	3.17	0.78	0.01	2.13	2.21	0.59	100.74
1995	0.39	5.53	0.63	4.42	4.05	17.13	2.30	4.98	0.72	2.42	13.27	26.20	4.09	8.79	3.30	0.80	0.01	2.20	2.27	0.61	104.10
1996	0.40	5.74	0.65	4.52	3.95	17.89	2.39	5.06	0.71	2.47	13.58	27.00	4.21	9.05	3.40	0.83	0.01	2.26	2.36	0.62	107.10
1997	0.40	5.77	0.66	4.63	3.86	18.51	2.40	5.11	0.69	2.53	13.76	27.47	4.22	9.22	3.45	0.84	0.01	2.26	2.37	0.63	108.79
1998	0.41	5.81	0.66	4.68	3.80	18.46	2.42	5.08	0.68	2.55	13.83	27.69	4.28	9.29	3.48	0.85	0.01	2.29	2.39	0.63	109.28
1999	0.40	5.72	0.66	4.66	3.83	18.70	2.38	5.04	0.69	2.54	13.66	27.51	4.20	9.24	3.45	0.83	0.01	2.25	2.35	0.62	108.70
2000	0.39	5.66	0.63	4.48	3.89	18.29	2.35	4.90	0.70	2.44	13.34	26.80	4.06	9.01	3.38	0.83	0.01	2.17	2.33	0.60	106.26
2001	0.39	5.61	0.63	4.46	3.86	17.69	2.34	4.94	0.69	2.44	13.34	26.53	4.11	8.90	3.34	0.82	0.01	2.20	2.31	0.61	105.23
2002	0.39	5.58	0.63	4.43	3.92	17.57	2.32	4.94	0.70	2.42	13.35	26.37	4.09	8.85	3.32	0.81	0.01	2.19	2.30	0.61	104.79

Table A.2-Forest Service 25% payments/acre to Oregon counties 1973-1992, with projections to 2002 based on 10-year rolling average

(1991-2 adjusted for spotted owl guarantees)

County/ Acre	Clackamas (510424)		Curry (559739)		Douglas (904993)		Jackson (402380)		Josephine (296170)		Lane (1334031)		Linn (466332)		Multnomah (76423)		Tillamook (91223)		Yamhill (25500)		
	Benton (16310)	Coos (57939)	Deschutes (980193)	Hood R. (212637)	Jefferson (164996)	Klamath (1722703)	Lincoln (171651)	Marion (204117)	Polk (318)	Wasco (211350)	Average (8409429)										
in dollars per acre																					
1973	9.69	5.02	4.13	3.23	1.04	6.17	5.02	3.86	1.19	3.29	1.42	7.25	9.63	6.92	6.37	4.75	9.69	9.80	4.96	9.67	4.29
1974	8.47	5.19	4.02	3.22	1.79	4.18	5.19	3.19	1.92	3.24	1.69	6.54	8.42	6.49	6.13	4.91	8.47	8.57	5.12	8.45	4.02
1975	6.68	3.86	3.47	2.86	1.05	5.33	3.86	3.18	1.16	2.90	1.16	5.93	6.64	5.92	5.30	3.65	6.69	6.76	3.81	6.67	3.52
1976	13.30	7.13	6.69	5.41	2.83	8.42	7.13	4.90	3.01	5.42	2.40	10.26	13.22	9.94	9.11	6.74	13.31	13.46	7.04	10.58	6.34
1977	18.91	7.28	8.29	6.16	3.76	10.29	7.27	7.38	3.93	6.25	3.29	15.55	18.74	15.61	12.79	6.87	18.95	19.17	7.17	2.70	8.49
1978	22.15	7.98	10.69	8.31	3.45	14.17	7.97	10.60	3.65	8.46	4.44	16.76	21.95	16.00	13.28	7.54	22.17	22.42	7.86	22.11	9.96
1979	23.80	10.55	13.42	11.22	4.50	16.55	10.54	13.10	4.73	11.36	5.73	18.06	23.61	17.09	14.86	9.97	23.82	24.11	10.40	23.77	11.73
1980	19.64	13.82	9.16	6.90	3.14	11.44	13.85	8.53	3.50	7.01	4.53	15.89	19.53	15.74	15.07	13.07	19.65	19.89	13.63	19.61	9.89
1981	21.82	10.95	8.37	5.44	4.74	10.72	10.95	10.89	4.97	5.76	3.82	9.79	21.73	13.43	12.57	10.36	21.83	22.10	10.80	21.78	8.43
1982	8.87	4.44	3.07	1.80	2.26	7.08	4.43	4.37	2.36	1.95	1.68	8.27	8.84	8.37	7.03	4.19	8.88	8.98	4.37	8.86	4.63
1983	11.71	7.20	4.59	3.05	4.62	7.35	7.21	9.73	4.73	3.43	4.39	7.16	13.43	9.84	8.93	6.81	11.72	11.86	7.10	11.70	6.36
1984	16.32	7.85	5.93	3.66	5.20	11.65	7.86	6.88	5.32	3.85	5.74	11.22	16.29	10.05	9.30	7.43	16.34	16.60	7.75	16.30	7.99
1985	16.90	6.77	7.91	5.98	5.12	10.53	6.77	10.39	5.22	6.25	5.93	13.60	16.86	13.39	11.15	6.41	16.91	17.18	6.67	16.87	8.81
1986	23.91	10.66	9.56	6.25	4.94	12.97	10.67	11.39	5.14	6.56	6.82	16.71	23.86	15.65	13.96	10.10	23.93	24.14	10.51	23.82	10.73
1987	21.58	10.53	10.03	7.37	4.53	20.99	10.55	13.59	4.75	7.73	7.57	19.00	21.55	18.28	15.67	10.10	21.60	21.79	10.39	21.50	12.36
1988	29.48	13.13	12.63	8.75	3.62	17.78	13.13	13.62	3.95	9.04	9.06	22.08	29.50	21.16	18.46	12.63	30.92	29.80	12.96	29.50	13.68
1989	32.40	12.29	15.38	11.47	3.26	25.21	12.25	15.90	3.59	11.74	9.77	25.91	32.42	24.64	20.49	11.89	32.43	32.75	12.23	32.43	15.83
1990	20.81	11.99	10.67	8.34	4.26	26.83	11.96	11.08	4.54	8.50	7.72	22.12	20.80	21.71	18.44	11.62	20.81	21.02	11.94	20.81	13.86
1991	24.84	11.64	11.61	8.57	3.34	20.87	11.62	12.35	3.64	8.79	7.73	21.13	24.84	20.18	17.30	11.59	24.84	25.12	11.61	24.84	13.03
1992	23.14	10.50	10.51	7.60	3.71	18.61	10.49	11.97	3.95	7.84	7.68	19.14	23.14	18.18	15.59	10.49	23.14	23.14	10.49	23.14	12.04
1993	22.11	10.26	9.88	7.10	4.26	17.28	10.25	11.69	4.48	7.37	7.24	17.81	22.27	17.31	14.93	9.91	22.26	22.34	10.17	22.09	11.47
1994	23.15	10.56	10.41	7.51	4.23	18.27	10.55	11.88	4.46	7.77	7.53	18.87	23.15	18.06	15.53	10.22	23.32	23.39	10.47	23.13	11.98
1995	23.83	10.83	10.86	7.89	4.13	18.93	10.82	12.39	4.37	8.16	7.70	19.64	23.84	18.86	16.15	10.49	24.02	24.07	10.74	23.81	12.38
1996	24.52	11.24	11.16	8.08	4.03	19.77	11.23	12.58	4.29	8.35	7.88	20.24	24.54	19.40	16.65	10.90	24.73	24.75	11.15	24.51	12.74
1997	24.59	11.30	11.31	8.27	3.94	20.45	11.28	12.70	4.20	8.53	7.99	20.59	24.60	19.78	16.92	10.98	24.81	24.82	11.22	24.58	12.94
1998	24.89	11.37	11.44	8.36	3.88	20.40	11.36	12.62	4.15	8.61	8.03	20.75	24.91	19.93	17.05	11.07	25.13	25.12	11.30	24.88	12.99
1999	24.43	11.20	11.32	8.32	3.90	20.66	11.18	12.52	4.17	8.57	7.93	20.62	24.45	19.80	16.90	10.91	24.55	24.65	11.13	24.42	12.93
2000	23.63	11.09	10.92	8.00	3.97	20.21	11.07	12.18	4.22	8.25	7.74	20.09	23.65	19.32	16.55	10.82	23.76	23.84	11.02	23.62	12.64
2001	23.91	11.00	10.94	7.97	3.94	19.55	10.99	12.29	4.19	8.22	7.74	19.89	23.94	19.08	16.36	10.74	24.05	24.12	10.93	23.90	12.51
2002	23.82	10.93	10.88	7.91	4.00	19.41	10.92	12.28	4.25	8.17	7.75	19.76	23.85	18.97	16.26	10.65	23.98	24.02	10.86	23.81	12.46

Table A.3-Forest Service 25% payments to Washington counties 1974-1992, with projections to 2002 based on 10-year rolling average

(1991-2 adjusted for spotted owl guarantees)

County/ Acre	Clallam (519728)		Cowlitz (32610)		Jefferson (700461)		Kittitas (413164)		Mason (164866)		Pierce (124579)		Skamania (846995)		Thurston (622)		Yakima (504095)		Total
	Chelan (1441113)	Clark (1180)	Grays H. (149584)	King (349467)	Lewis (446116)	Okanogan (1499866)	Skagit (518633)	Snohomish (631606)	Whatcom (836277)										(918096)
in million dollars																			
1974	0.82	0.97	0.01	0.12	0.03	1.32	0.70	0.32	2.27	0.31	0.78	0.27	0.38	4.63	0.70	0.00	0.66	1.18	15.49
1975	0.37	1.16	0.01	0.12	0.27	0.90	0.81	0.23	2.27	0.28	0.32	0.32	0.32	4.56	0.71	0.00	0.56	1.34	14.54
1976	0.80	1.19	0.01	0.12	0.37	1.61	0.87	0.35	2.34	0.12	0.73	0.34	0.67	4.70	1.07	0.00	2.03	1.43	18.76
1977	1.27	1.88	0.01	0.16	0.58	2.54	1.31	0.54	3.12	0.60	1.53	0.51	0.86	6.26	1.46	0.00	1.50	2.12	26.24
1978	1.36	1.88	0.01	0.20	0.58	2.53	1.07	0.52	3.75	0.59	1.26	0.41	1.12	7.74	1.58	0.00	1.97	1.84	28.41
1979	1.50	2.94	0.02	0.25	0.91	3.97	1.43	0.61	4.76	0.93	1.41	0.56	1.28	9.79	1.87	0.00	2.07	2.45	36.75
1980	0.93	2.95	0.01	0.16	0.91	3.99	1.44	0.47	3.20	0.94	1.56	0.56	1.14	6.36	1.75	0.00	1.84	2.30	30.50
1981	1.42	2.16	0.01	0.15	0.67	2.92	1.42	0.59	2.94	0.69	1.60	0.55	1.05	5.79	0.72	0.00	1.70	2.25	26.62
1982	0.32	1.38	0.01	0.10	0.43	1.87	0.85	0.22	1.91	0.44	0.40	0.33	0.95	3.82	1.30	0.00	1.57	1.36	17.25
1983	0.90	1.12	0.01	0.12	0.34	1.51	0.99	0.39	2.30	0.35	1.29	0.38	0.69	4.62	1.12	0.00	1.12	1.59	18.85
1984	1.34	1.58	0.01	0.14	0.49	2.13	1.07	0.51	2.74	0.50	0.62	0.41	1.03	5.55	1.46	0.00	1.67	1.75	22.99
1985	1.31	1.12	0.01	0.13	0.35	1.51	0.83	0.46	2.48	0.35	0.82	0.32	0.82	5.11	1.15	0.00	1.33	1.39	19.48
1986	2.37	1.53	0.01	0.20	0.47	2.07	1.25	0.79	2.89	0.49	1.09	0.45	0.77	5.93	1.31	0.00	1.24	1.95	24.78
1987	1.90	1.59	0.01	0.30	0.49	2.14	1.64	0.74	3.87	0.50	1.44	0.59	1.04	7.91	1.75	0.00	1.68	2.57	30.17
1988	2.29	2.35	0.02	0.44	0.72	3.17	1.76	0.86	5.46	0.74	2.26	0.63	1.35	11.42	2.09	0.00	2.18	2.89	40.64
1989	2.61	2.57	0.01	0.42	0.79	3.46	2.39	1.04	5.27	0.81	2.92	0.86	1.27	10.73	2.33	0.00	2.05	3.70	43.25
1990	2.28	1.82	0.01	0.33	0.53	2.46	2.00	0.89	4.24	0.58	1.34	0.72	1.05	8.61	1.93	0.00	1.70	3.06	33.56
1991	2.16	2.03	0.01	0.38	0.58	2.74	2.17	0.89	4.82	0.64	1.95	0.78	1.15	9.85	2.08	0.00	1.85	2.91	37.00
1992	2.06	1.78	0.01	0.31	0.51	2.40	1.74	0.79	3.90	0.57	1.63	0.61	0.99	8.04	1.72	0.00	1.59	2.67	31.34
1993	1.92	1.75	0.01	0.28	0.53	2.36	1.58	0.74	3.80	0.55	1.53	0.58	1.02	7.78	1.69	0.00	1.64	2.45	30.21
1994	2.02	1.81	0.01	0.29	0.55	2.44	1.64	0.77	3.95	0.57	1.56	0.59	1.05	8.09	1.75	0.00	1.69	2.53	31.34
1995	2.09	1.83	0.01	0.31	0.55	2.47	1.70	0.80	4.07	0.58	1.65	0.61	1.05	8.35	1.78	0.00	1.70	2.61	32.18
1996	2.17	1.91	0.01	0.33	0.57	2.57	1.79	0.83	4.23	0.60	1.74	0.64	1.07	8.67	1.84	0.00	1.73	2.73	33.45
1997	2.15	1.94	0.01	0.34	0.58	2.62	1.84	0.83	4.36	0.62	1.80	0.66	1.10	8.95	1.90	0.00	1.78	2.81	34.31
1998	2.18	1.98	0.01	0.34	0.59	2.67	1.86	0.84	4.41	0.63	1.84	0.67	1.11	9.05	1.91	0.00	1.79	2.84	34.73
1999	2.16	1.94	0.01	0.33	0.58	2.62	1.87	0.84	4.30	0.62	1.80	0.67	1.09	8.81	1.89	0.00	1.75	2.83	34.14
2000	2.12	1.88	0.01	0.32	0.56	2.54	1.82	0.82	4.21	0.60	1.68	0.65	1.07	8.62	1.85	0.00	1.72	2.75	33.22
2001	2.10	1.89	0.01	0.32	0.56	2.54	1.80	0.81	4.20	0.60	1.72	0.65	1.07	8.62	1.84	0.00	1.73	2.71	33.19
2002	2.10	1.87	0.01	0.32	0.56	2.52	1.77	0.81	4.14	0.59	1.69	0.63	1.06	8.50	1.82	0.00	1.71	2.70	32.81

Table A.4-Forest Service 25% payments/acre to Washington counties 1974-1992, with projections to 2002 based on 10-year rolling average

(1991-2 adjusted for spotted owl guarantees)

County/ Acre	Chelan (1441113)	Clallam (519728)	Clark (1180)	Cowlitz (32610)	Grays H. (149584)	Jefferson (700461)	King (349467)	Kittitas (413164)	Lewis (446116)	Mason (164866)	Okanogan (1499866)	Pierce (124579)	Skagit (518633)	Skamania (846995)	Snohomish (631606)	Thurston (622)	Whatcom (836277)	Yakima (504095)	Average (918096)
in dollars per acre																			
1974	0.57	1.87	6.92	3.69	0.21	1.88	1.99	0.78	5.09	1.88	0.52	2.17	0.73	5.47	1.12	2.08	0.79	2.34	1.69
1975	0.26	2.23	6.82	3.63	1.78	1.29	2.33	0.55	5.08	1.69	0.21	2.54	0.62	5.39	1.13	2.42	0.67	2.67	1.58
1976	0.56	2.29	7.02	3.74	2.46	2.29	2.50	0.84	5.25	0.75	0.49	2.72	1.30	5.55	1.69	2.61	2.43	2.85	2.04
1977	0.88	3.61	9.33	4.89	3.87	3.62	3.75	1.29	7.00	3.62	1.02	4.08	1.65	7.39	2.32	3.91	1.80	4.20	2.86
1978	0.95	3.61	11.55	6.05	3.86	3.61	3.05	1.25	8.40	3.60	0.84	3.32	2.17	9.14	2.51	3.19	2.35	3.66	3.09
1979	1.04	5.66	14.60	7.66	6.06	5.67	4.10	1.48	10.67	5.66	0.94	4.47	2.47	11.56	2.96	4.31	2.47	4.86	4.00
1980	0.65	5.68	9.48	4.90	6.09	5.69	4.11	1.14	7.16	5.68	1.04	4.48	2.20	7.50	2.76	4.23	2.20	4.56	3.32
1981	0.99	4.16	8.64	4.46	4.45	4.16	4.06	1.43	6.59	4.16	1.06	4.42	2.03	6.84	1.14	4.24	2.03	4.46	2.90
1982	0.22	2.66	4.57	2.97	2.86	2.67	2.44	0.53	4.28	2.66	0.27	2.65	1.83	4.51	2.06	2.55	1.88	2.70	1.88
1983	0.63	2.15	5.53	3.60	2.30	2.15	2.83	0.94	5.17	2.15	0.86	3.08	1.33	5.46	1.77	2.94	1.34	3.16	2.05
1984	0.93	3.04	6.63	4.31	3.25	3.04	3.06	1.24	6.14	3.04	0.41	3.33	1.99	6.55	2.32	3.19	2.00	3.46	2.50
1985	0.91	2.15	6.11	3.97	2.31	2.16	2.36	1.12	5.56	2.15	0.54	2.58	1.58	6.03	1.82	2.47	1.59	2.75	2.12
1986	1.64	2.95	6.90	6.16	3.16	2.95	3.57	1.92	6.47	2.95	0.72	3.60	1.48	7.00	2.07	3.54	1.48	3.86	2.70
1987	1.32	3.05	9.20	9.35	3.27	3.05	4.70	1.79	8.68	3.05	0.96	4.74	2.01	9.34	2.77	4.72	2.01	5.09	3.29
1988	1.59	4.52	13.36	13.62	4.84	4.52	5.04	2.08	12.23	4.52	1.51	5.09	2.61	13.49	3.30	5.01	2.61	5.72	4.43
1989	1.81	4.94	12.54	12.78	5.29	4.94	6.85	2.51	11.82	4.94	1.94	6.91	2.45	12.67	3.69	6.88	2.45	7.35	4.71
1990	1.58	3.51	10.24	10.24	3.51	3.51	5.72	2.15	9.50	3.51	0.89	5.74	2.03	10.17	3.06	5.65	2.03	6.08	3.66
1991	1.50	3.91	11.69	11.69	3.91	3.91	6.22	2.14	10.80	3.91	1.30	6.24	2.21	11.63	3.29	6.14	2.22	5.78	4.03
1992	1.43	3.43	9.49	9.49	3.43	3.43	4.97	1.91	8.75	3.43	1.08	4.89	1.91	9.49	2.72	4.94	1.91	5.31	3.41
1993	1.33	3.36	9.17	8.52	3.53	3.37	4.53	1.78	8.51	3.36	1.02	4.62	1.96	9.18	2.68	4.55	1.96	4.86	3.29
1994	1.40	3.49	9.53	9.01	3.65	3.49	4.70	1.86	8.85	3.49	1.04	4.77	2.02	9.55	2.77	4.71	2.03	5.03	3.41
1995	1.45	3.53	9.82	9.48	3.69	3.53	4.87	1.93	9.12	3.53	1.10	4.92	2.03	9.86	2.82	4.86	2.03	5.18	3.50
1996	1.51	3.67	10.20	10.03	3.83	3.67	5.12	2.01	9.47	3.67	1.16	5.15	2.07	10.24	2.92	5.10	2.07	5.43	3.64
1997	1.49	3.74	10.52	10.42	3.89	3.74	5.27	2.02	9.77	3.74	1.20	5.31	2.13	10.56	3.00	5.26	2.13	5.58	3.74
1998	1.51	3.81	10.66	10.53	3.96	3.81	5.33	2.04	9.88	3.81	1.23	5.36	2.14	10.68	3.02	5.31	2.14	5.63	3.78
1999	1.50	3.74	10.39	10.22	3.87	3.74	5.36	2.04	9.65	3.74	1.20	5.39	2.10	10.40	3.00	5.34	2.10	5.62	3.72
2000	1.47	3.62	10.17	9.96	3.73	3.62	5.21	1.99	9.43	3.62	1.12	5.24	2.06	10.18	2.93	5.19	2.06	5.45	3.62
2001	1.46	3.63	10.16	9.94	3.75	3.63	5.16	1.97	9.42	3.63	1.15	5.19	2.06	10.18	2.92	5.14	2.06	5.39	3.62
2002	1.46	3.60	10.01	9.76	3.73	3.60	5.05	1.95	9.29	3.60	1.13	5.08	2.05	10.03	2.88	5.04	2.05	5.35	3.57



FOREST POLICY CENTER

1516 P STREET, NW WASHINGTON, DC 20005
(202) 667-3300 FAX (202) 667-7751

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