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OPINION/ESSAYS

The Presidential Forest Conference showed Clinton's commitment to help the Pacific Northwest move the public-land debate forward

Key Results From Forest Conference

By Vic Sher

THREE important and long-overdue results have come from the Presidential Forest Conference, held in Portland, Ore., April 2.

The first is that the conference happened. The president and vice president, six top officials, and dozens of White House staff came to Portland to begin to solve a problem that has devastated an irreplaceable ecosystem and divided an entire region of the United States for decades. That so many of the highest elected officials of the new administration came to the Northwest itself represents major progress.

President Clinton inherited a mess. The two previous administrations preached law and order in our cities but practiced lawlessness on our public lands. Case after case revealed what one federal judge called "a remarkable series of violations" of the environmental laws.

In a stark and welcome contrast, the Clinton administration showed its willingness to confront and grapple seriously with these problems as stewards of public lands rather than as litigants in federal courts.

What has been needed is a president willing to get his hands dirty to solve a difficult problem, but not to play dirty by breaking the law. The effort to engage a broad group in debating substantive issues will go far in achieving the president's goal of keeping this problem in the conference room and out of the courtroom.

The second result: Despite the divisiveness that is common in the Pacific Northwest, conference participants found common ground on several seemingly intractable differences.

Everyone agreed that there must be a significant change from the failed federal policies of the past. All parties agreed that public lands in the US must be managed to protect entire ecosystems

as biological communities, although environmentalists and the timber industry still differ over what this means.

To environmentalists, "ecosystem management" means "ecosystems"; to loggers, it means "management." Nonetheless, there is broad agreement that any ulti-

The very fact that the highest elected officials of the new administration came to the Northwest represents major progress.

mate federal solution must protect ancient forests that will support old-growth-dependent species of wildlife over the long haul.

All parties also agreed that the economies of timber-dependent towns must be addressed as a systematic whole. The timber industry still focuses on that industry exclusively; its solution is to continue to throw more public trees on the market. To others, rigor-

ous economics will focus on a variety of important factors:

- The timber industry's increased automation and competition from other regions and other products.

- The job losses associated with those changes.

- The decreasing importance of the timber industry within the region, while the overall economic health of the region has been strong. This suggests opportunities for re-employment outside the timber industry in family wage jobs.

- The importance of producing value-added wood products rather than exporting raw logs – and with them, American jobs.

The third significant point about the conference is that the president and vice president made clear their commitments to work within existing environmental laws and to preserve the rights of Americans to enforce those laws in the courts.

The environmental laws have

never been the problem. In fact, the sum total of the Bush administration's failed Northwest ancient-forest policy was an effort to gut these laws. Those efforts only encouraged agency lawlessness, promoted ecological disaster, and did nothing to address the real problems of timber workers and their communities. By making his position clear, Clinton imposed realistic and appropriate limits on potential solutions in the Northwest.

It will be some time before we see the final products of the Presidential Forest Conference.

But the Clinton administration has already shown it sees the forest, the trees, the ecosystem, and the communities. And it has shown that it is committed to helping the people of the Pacific Northwest move the debate forward.

■ Vic Sher was a participant in the forest conference on April 2. He is the managing attorney of the Northwest office of the Sierra Club Legal Defense Fund (SCLDF), in Seattle.

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FOREST CONFERENCE

April 2, 1993
Portland, Oregon

Position Paper/Recommendations
of the
ASSOCIATION OF O & C COUNTIES

PURPOSE OF THE O&C LANDS

The Association of O&C Counties is an organization whose membership includes the elected county commissioners from all 18 Oregon Counties in which the 2.5 million acres of Oregon and California Revested Grant Lands are located. These fragmented grant land remnants are commonly referred to as O&C lands (see attached map). In order to understand the Associations's view, it is necessary to briefly recount the unique history of these particular lands which were granted, in 1866, to the Oregon and California Railroad Company to assist in the construction of a railroad line from Portland, Oregon to the California border where it connected to another line that terminated in San Francisco.

Unique to this railroad land grant only, were three restrictive conditions: (1) they shall be sold to actual settlers only, (2) in quantities not greater than one quarter section to one purchaser, and (3) for a price not greater than \$2.50 per acre.

These provisos make clear that the Congressional intent was not only for a railroad line, but also for privatization of the granted lands that would lead to the development and stability of local communities.

After the Southern Pacific Company acquired the assets of the O&C Railroad in the early 1890's, all three restrictive covenants were violated and after lengthy litigation, in 1916, Congress revested title to the remaining unsold grant lands back into federal ownership. It is worthy of note that Congress did not place them back into the Public Domain from which they originally came, but

instead set up the "Oregon and California Land Grant Fund" wherein all monies received from the sale of lands or products therefrom would be deposited for distribution to the Federal Treasury and state and local governments. As the General Land Office then went about the continued policy of privatization, Congress made periodic tax equivalency payments to offset tax payments previously paid by the railroad.

Finally, in 1937, after failure to dispose of the lands and the realization that most of the lands were not suitable for agricultural settlement, Congress, by statute, reversed its objective of disposal to one of retention and directed the Interior Department to manage the lands "under the conservation principle of sustained yield, primarily for timber production...for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow and contributing to the stability of local communities and industries, and providing recreational facilities". No where in the Act is there mention of a national purpose (see exhibit "A").

In further recognition of the local purpose, the 1937 O&C Act revised the 1916 distribution formula of receipts deposited into the "Oregon and California Land Grant Fund" as follows:

50% to the effected counties to be used for any county purposes.

25% to the Treasury to pay off previous Treasury outlays, i.e. tax equivalency payments to the counties (1913-1937) and court ordered payment to the railroad. The net amount owed to the Treasury equaled \$8.4 million. After Treasury payoff, this 25% would also go to the counties for a total of 75%.

25% to the Treasury to be made available for administration of the lands as Congress shall, from time to time, determine.

By 1951, the Treasury debt had been fully paid and in 1952 the counties received their full 75% share. But the counties were concerned with the low level of management by the federal government. They also realized that Congress would not make outlays beyond the Feds administrative 25%, especially for local purpose lands. In 1953, the counties voluntarily agreed to forego the middle 25% provided that the Congress, through its appropriations

process, would annually appropriate that amount for intensified management. Over the years this plowback arrangement has expanded from simple access road construction and fire protection to such activities as reforestation, recreation, timber stand improvement, research and even BLM District office buildings. Fearing environmental degradation, in 1971, the counties successfully urged the BLM to not wait for regularly appropriated funds, but instead use a part of the plowback monies to employ specialists in the fields of soil science, hydrology, fisheries, and wildlife.

This, one-of-a-kind, financial arrangement has resulted in the investment of nearly one billion dollars of otherwise county monies into these lands since 1953 and, in our opinion, has developed a modern forest second to none in the world. It has been estimated by the BLM that there was approximately 50 billion board feet of merchantable timber on these lands when the 1937 O&C Act was passed. The latest inventory (1988) some fifty years later, stands at 49.7 billion, with over 40 billion harvested during that time. Some mistakes may have been made, but a great majority of things must have been done right. Sustained yield through scientific management has been proven.

OTHER CONGRESSIONAL AFFIRMATION OF THE LOCAL PURPOSE

1964 The Public Land Review Commission Authorization Act intentionally omitted the O&C land from study.

1976 The Payment-in-Lieu of Taxes Act excluded the O&C lands.

1976 The Federal Land Policy and Management Act included all lands managed by the Bureau of Land Management, but Sec. 107 (b) declared that in the event of a conflict with the 1937 O&C Act, in-so-far as it relates to management of timber resources and distribution of receipts from the lands and resources, the latter Act shall prevail.

1978 The Endangered American Wilderness Act included about 3,500 acres of O&C lands but the Committee report of January 28, 1973 stated that the included O&C lands are "congressionally dedicated to commercial forest production...and...the fact that these special act lands which are intermingled with national forest lands which are now dedicated as wilderness should not be considered as precedent setting."

1985 PL 98-165. The Grande Ronde Indian Reservation Act granted the tribe approximately 10,000 acres of O&C lands but it provided that equal value Public Domain lands in the area be designated as O&C.

1986 PL 99-653. FLPMA amendment. The exchange provisions were clarified by stating that when O&C lands were exchanged with the U. S. Forest Service or any other entity, the acquired lands would take on the O&C designation.

The O&C lands are truly local in purpose and managed not unlike that of a trust by the federal government for the benefit of the local communities. Whatever legislative proposal that may develop from this forest conference, we respectfully request that the O&C lands be considered in the same manner as state or private lands.

COMMUNITY STABILITY

Our view is that a stable community is not just a population statistic, a dot on a map, or a cluster of houses. It is an area that produces employment for its own and goods and services for other. While the wheat communities of Kansas earn income for themselves and provide food for the nation, Western Oregon timberlands create local jobs and contribute to the wood product needs of the nation. Any sudden disruption in raw material supply reverberates in both directions - unemployment locally with short supply and higher prices at the retail end.

The probable social and economic impacts upon Western Oregon counties are described in the 1991 University of Washington study authored by Dr. Robert G. Lee titled "Social Impacts of Alternative Timber Harvest Reductions on Federal Lands in the O&C Counties". Copy enclosed as Exhibit "B". The report clearly concludes that as timber harvests decline unemployment increases placing greater demand for county social services, ironically, at a time of lower shared timber receipts to the counties.

SAFETY NET

As an interim measure during FY 1991, FY 1992 and FY 1993, Congress provided language in its Appropriations Acts that guaranteed county shared

receipts, both O&C and National Forest, at a percent of historic levels. But it included a proviso that in "no event would the payments exceed the total amount of receipts collected."

This safety net, though at 85% of normal, has allowed the counties to operate at less than optimum efficiency but at a sustainable level and we are grateful to Congress for that protection.

The proviso that limited the safety net payments to no more than total collections has not had any impact upon safety net payments to date because there has been sufficient timber under previous contracts and available for harvest to fill the net. But recent statistics indicate that by the end of FY 1993 the contract pipeline will be virtually dry. Thus, the existing safety net language, if enacted for FY 1994, will be meaningless.

If timber dependent counties are to survive and serve their meaningful purposes, Congress must either strike the restrictive proviso thus allowing a direct subsidy to the counties or immediately institute a timber sale quantity sufficient to meet or exceed the safety net amount. Counties prefer the latter.

INCOME FOREGONE APPROACH

As appreciative as the counties are for the safety net rescue, the O&C Counties believe that there is a more just and long term method to accommodate their vested interest in the O&C lands. A more principled and logical plan, and one with historic underpinnings, would be for the federal government to pay annually to the O&C Counties our share of income foregone caused by the conversion of a portion of these local purpose lands to that of a national purpose. The income foregone payment would be in addition to the normal share of receipts from O&C timber lands that remain in the commercial base. In this way the O&C Counties legitimate expectations of the O&C Act and subsequent county plowback investments would not be frustrated.

Such a provision was included in two 1992 legislative proposals introduced by Congressman Peter DeFazio and Congress Mike Kopetski. We request that this approach be included in any proposed legislation resulting from this forest conference effort. Suggested language is hereby included as Exhibit "C".

RESOLUTION OF CONFLICT

This Association agrees with Vice President Gore's statement to the effect that any legislative solution to the problem must be based upon science. We would expand that to say "verifiable science".

Presently, Congress and the Administration are caught in a barrage of conflicting scientific opinions each claiming their righteousness. Who shall we believe? Where is the truth? Historically, in matters of forest science, Congress has turned to its own agency, the Forest Service. But, for whatever reason, its scientific credibility is now in question. There is a way to verify the credibility of the conflicting scientific data...a method which has precedent and a successful track record.

In the early 1980's, charged with writing regulations required by the Clean Air Act of 1970, the EPA Administrator found himself in a quandary regarding the health effects of automotive emissions. Bitter disputes between industry and government scientists about the quality of the scientific data and conclusions at its base were ongoing. The search for scientific truth concerning the health effects of potentially harmful substances had far too often become a battle of pre-committed experts in which each attempted to contradict the science of the other.

Douglas Costle, then EPA Administrator, established the Health Effects Institute (HEI) and appointed the impeccable Archibald Cox to chair the institute. He then surrounded Cox with a Board of Directors of equal dedication to quality science with a determination of building bridges between the public and private sectors. By 1984, William Ruckelshaus, the new administrator, said in part, "We are beginning to see the emergence of 'bridging institutions' between industry and government and even between industry and the green machine (environmentalists). The old hostilities are breaking down, and old grievances are giving way to a spirit of cooperation, a willingness to listen". (See 1985 interim report of HEI, enclosed as Exhibit "D".)

There may be little in common between exhaust gasses and timber management, but the scientific conflict is most analogous. The Association of O&C Counties recommend the establishment of a similar institute, possibly called the "Forest Sciences Institute", and suggest that it be given two years for a

report as to the true scientific state of northwest forests, with recommendation for future management policies.

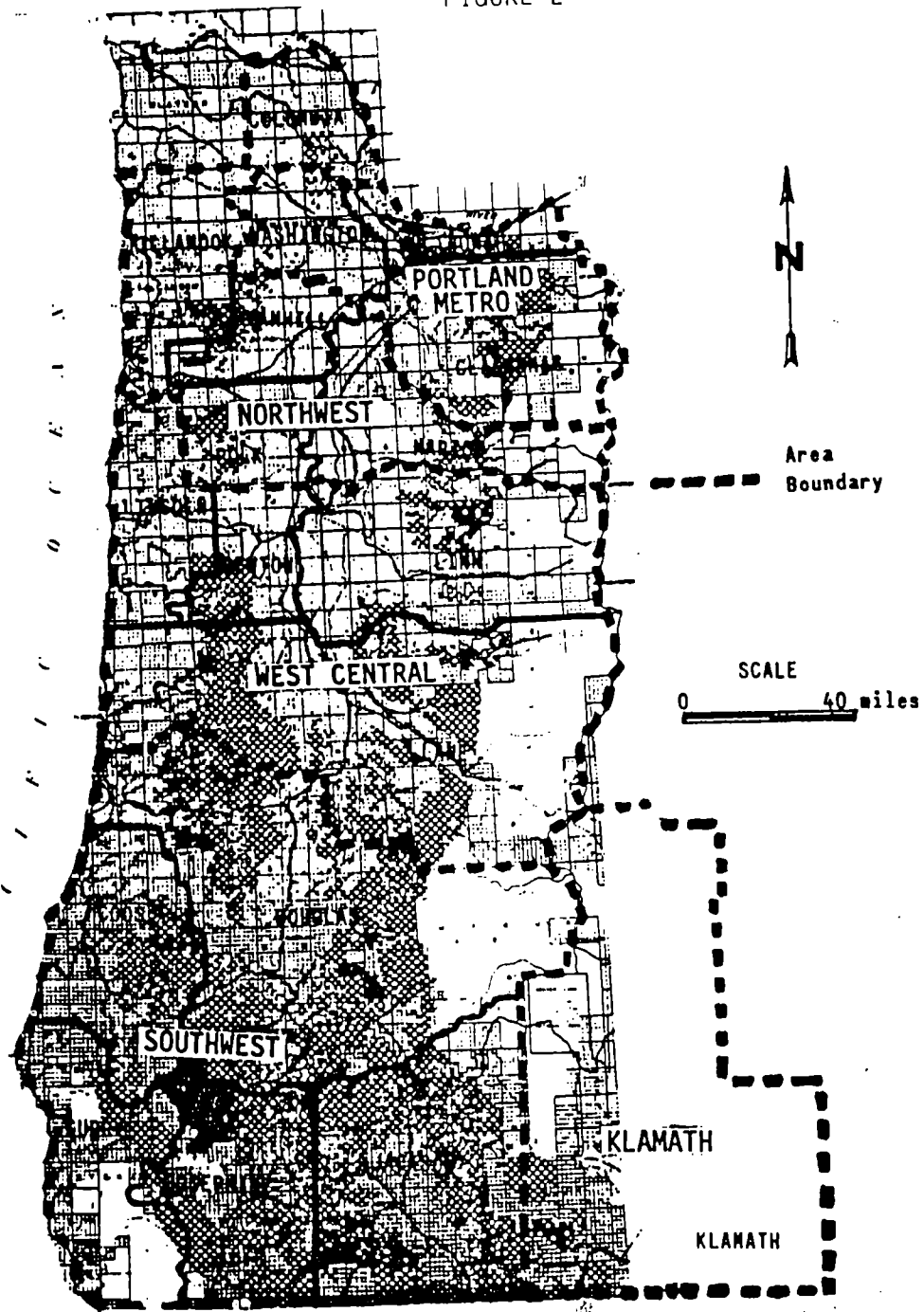
To keep the industry alive and contributing to the local and national needs, Congress should arbitrarily set a litigation proof Allowable Sale Quantity for FY 1994 and FY 1995 pending the outcome of the institute's report.

Despite the urgency of a resolution to the timber crisis, the issue is too enormous and important to risk legislative remedy based upon unverified science.

Respectfully submitted by: Rocky McVay, President
Association of O&C Counties

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FIGURE 2



O & C COUNTY AREAS

SECTIONS 1181a - 1181j, UNITED STATES CODE

OREGON AND CALIFORNIA RAILROAD AND COOS BAY
WAGON ROAD GRANT LANDS

Sec. 1181a. Conservation management by Department of Interior; permanent forest production; sale of timber; subdivision

Notwithstanding any provisions in the Acts of June 9, 1916 (39 Stat. 218), and February 26, 1919 (40 Stat. 1179), as amended, such portions of the revested Oregon and California Railroad and reconveyed Coos Bay Wagon Road grant lands as are or may hereafter come under the jurisdiction of the Department of the Interior, which have heretofore or may hereafter be classified as timberlands, and power-site lands valuable for timber, shall be managed, except as provided in section 1181c of this title, for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities: Provided, That nothing in this section shall be construed to interfere with the use and development of power sites as may be authorized by law.

The annual productive capacity for such lands shall be determined and declared as promptly as possible after August 28, 1937, but until such determination and declaration are made the average annual cut therefrom shall not exceed one-half billion feet board measure: Provided, That timber from said lands in an amount not less than one-half billion feet board measure, or not less than the annual sustained yield capacity when the same has been determined and declared, shall be sold annually, or so much thereof as can be sold at reasonable prices on a normal market.

If the Secretary of the Interior determines that such action will facilitate sustained-yield management, he may subdivide such revested lands into sustained-yield forest units, the boundary lines of which shall be so established that a forest unit will provide, insofar as practicable, a permanent source of raw materials for the support of dependent communities and local industries of the region; but until such subdivision is made the land shall be treated as a single unit in applying the principle of sustained yield: Provided, That before the boundary lines of such forest units are established, the Department, after published notice thereof, shall hold a hearing thereon in the vicinity of such lands open to the attendance of State and local officers, representatives of dependent industries, residents, and other persons interested in the use of such lands. Due consideration shall be given to established lumbering operations in subdividing such lands when necessary to protect the economic stability of dependent communities. Timber sales from a forest unit shall be limited to the productive capacity of such unit and the Secretary is authorized, in his discretion, to reject any bids which may interfere with the sustained-yield management plan of any unit. Aug. 28, 1937, c. 876, Title I, sec. 1, 50 Stat. 874.

Sec. 1181b. Cooperative agreements with other agencies or private owners for coordinated administration

The Secretary of the Interior is authorized, in his discretion, to make cooperative agreements with other Federal or State forest administrative agencies or with private forest owners or operators for the coordinated administration, with respect to time, rate, method of cutting, and sustained yield, of forest units comprising parts of revested or reconveyed lands, together with lands in private ownership or under the administration of other public agencies, when by such agreements he may be aided in accomplishing the purposes mentioned in sections 1181a and 1181b of this title. Aug. 28, 1937, c. 876, Title I, sec. 2, 50 Stat. 874.

Sec. 1181c. Classification of lands more suitable for agricultural use; reclassification

The Secretary of the Interior is authorized to classify, either on application or otherwise, and restore to homestead entry, or purchase under the provisions of section 1171 of this title, any of such revested or reconveyed land which, in his judgment, is more suitable for agricultural use than for afforestation, reforestation, stream-flow protection, recreation, or other public purposes.

Any of said lands heretofore classified as agricultural may be reclassified as timber lands, if found, upon examination, to be more suitable for the production of trees than agricultural use, such reclassified timber lands to be managed for permanent forest production as herein provided. Aug. 28, 1937, c. 876, Title I, sec. 3, 50 Stat. 875.

Sec. 1181d. Leasing of lands for grazing; disposition of moneys; rules and regulations covering grazing lands

The Secretary of the Interior is authorized, in his discretion, to lease for grazing any of said revested or reconveyed lands which may be so used without interfering with the production of timber or other purposes of sections 1181a-1181f of this title as stated in section 1181a of this title: Provided, That all the moneys received on account of grazing leases shall be covered either into the "Oregon and California land-grant fund" or the "Coos Bay Wagon Road grant fund" in the Treasury as the location of the leased lands shall determine, and be subject to distribution as other moneys in such funds: Provided further, That the Secretary is also authorized to formulate rules and regulations for the use, protection, improvement, and rehabilitation of such grazing lands. Aug. 28, 1937, c. 876, Title I, sec. 4, 50 Stat. 875.

Sec. 1181e. Rules and regulations generally; consultation and agreements with other agencies regarding fire regulations

The Secretary of the Interior is authorized to perform any and all acts and to make such rules and regulations as may be necessary and proper for

the purpose of carrying the provisions of sections 1181a-1181f of this title into full force and effect. The Secretary of the Interior is further authorized, in formulating forest-practice rules and regulations, to consult with the Oregon State Board of Forestry, representatives of timber owners and operators on or contiguous to said revested and reconveyed lands, and other persons or agencies interested in the use of such lands.

In formulating regulations for the protection of such timberlands against fire, the Secretary is authorized, in his discretion, to consult and advise with Federal, State, and county agencies engaged in forest-fire-protection work, and to make agreements with such agencies for the cooperative administration of fire regulations therein: Provided, That rules and regulations for the protection of the revested lands from fire shall conform with the requirements and practices of the State of Oregon insofar as the same are consistent with the interests of the United States. Aug. 28, 1937, c. 876, Title I, sec. 5, 50 Stat. 875.

Sec. 1181f. Annual distribution of moneys in special fund

On and after March 1, 1938, all moneys deposited in the Treasury of the United States in the special fund designated the "Oregon and California land-grant fund" shall be distributed annually as follows:

(a) Fifty per centum to the counties in which the lands revested under the Act of June 9, 1916 (39 Stat. 218), are situated, to be payable on or after June 30, 1938, and each year thereafter to each of said counties in the proportion that the total assessed value of the Oregon and California grant lands in each of said counties for the year 1915 bears to the total assessed value of all of said lands in the State of Oregon for said year, such moneys to be used as other county funds: Provided, however, That for the purposes of this subsection the portion of the said revested Oregon and California railroad grant lands in each of said counties which was not assessed for the year 1915 shall be deemed to have been assessed at the average assessed value of the grant lands in said county.

(b) Twenty-five per centum to said counties as money in lieu of taxes accrued or which shall accrue to them prior to March 1, 1938, under the provisions of the Act of July 13, 1926 (44 Stat. 915), and which taxes are unpaid on said date, such moneys to be paid to said counties severally by the Secretary of the Treasury of the United States, upon certification by the Secretary of the Interior, until such tax indebtedness as shall have accrued prior to March 1, 1938, is extinguished.

From and after payment of the above accrued taxes said 25 per centum shall be accredited annually to the general fund in the Treasury of the United States until all reimbursable charges against the Oregon and California land-grant fund owing to the general fund in the Treasury have been paid: Provided, That if for any year after the extinguishment of the tax indebtedness accruing to the counties prior to March 1, 1938, under the provisions of Forty-fourth Statutes, page 915, the total amount payable under subsection (a) of this section is less than 78 per centum of the aggregate amount of tax claims which accrued to said counties under said Act for the year 1934, there shall be additionally payable for such year such portion of said 25 per centum (but not in excess of three-fifths of

said 25 per centum), as may be necessary to make up the deficiency. When the general fund in the Treasury has been fully reimbursed for the expenditures which were made charges against the Oregon and California land-grant fund said 25 per centum shall be paid annually, on or after June 30, to the several counties in the manner provided in subsection (a) of this section.

(c) Twenty-five per centum to be available for the administration of sections 1181a-1181f of this title, in such annual amounts as the Congress shall from time to time determine. Any part of such per centum not used for administrative purposes shall be covered into the general fund of the Treasury of the United States: Provided, That moneys covered into the Treasury in such manner shall be used to satisfy the reimbursable charges against the Oregon and California land-grant fund mentioned in subsection (b) of this section so long as any such charges shall exist. Aug. 28, 1937, c. 876, Title II, sec. 201, 50 Stat. 875; June 24, 1954, c. 357, sec. 1(b), 68 Stat. 271.

Sec. 1181g. Unselected and unpatented odd-numbered sections as revested grant lands; administration as national-forest lands; revenues; prohibition against disposition or exchange

Those unselected and unpatented odd-numbered sections within the indemnity limits of the Oregon and California Railroad land grant authorized by the Act of July 25, 1866 (14 Stat. 239), as amended by the Act of April 10, 1869 (16 Stat. 47), and for which payment was made by the United States to such railroad or its successors in interest under the Act of June 9, 1916 (39 Stat. 218), pursuant to the decree in the case of United States against Oregon and California R. R. Co. (8 F.2d 645), which were included within the boundaries of national forests by proclamations of the President of the United States issued under the dates of June 17, 1892, September 28, 1893, October 5, 1906, January 25, 1907, March 1, 1907, and March 2, 1907, are hereby declared to be revested Oregon and California railroad grant lands; and said lands shall continue to be administered as national-forest lands by the Secretary of Agriculture subject to all laws, rules, and regulations applicable to the national forests: Provided, That all revenues hereafter derived from said lands and those revenues heretofore derived from such lands and placed in special deposit by agreement between the Secretary of Agriculture and the Secretary of the Interior shall be disposed of in accordance with the provisions of section 1181f of this title and said lands shall not hereafter be subject to the provisions of any other laws or parts of laws which otherwise prescribe the disposal or distribution of receipts from lands of the United States, except that none of the provisions of sections 1181f (a), 1181g-1181j of this title shall affect revenues heretofore distributed. No part of said lands or the resources thereof shall be subject to exchange under the provisions of sections 1181f (a) and 1181g-1181j of this title or any other law applicable to national-forest lands or otherwise. June 24, 1954, c. 357, sec. 1(a), 68 Stat. 270.

Sec. 1181h. Exchange of jurisdiction between Secretaries; conditions; publication in Federal Register

The Secretary of the Interior and the Secretary of Agriculture are authorized and directed, within two years after June 24, 1954, to exchange administrative jurisdiction of revested Oregon and California railroad grant lands lying within the boundaries of any national forest or within two miles of such boundaries, and national-forest lands of approximately equal aggregate value, when by such exchange the administration of the lands will be facilitated. Such exchanges shall be made subject to outstanding contracts, permits or other existing rights: Provided, That the said national-forest lands, administrative jurisdiction of which is transferred to the Secretary of the Interior, shall be excluded from the national forest and shall become subject to administration under the same provisions of law as the revested lands in exchange for which they were transferred, and the revested lands, administrative jurisdiction of which is transferred to the Secretary of Agriculture, shall become a part of the national forests subject to administration under the laws applicable to national forests: Provided further, That subject to the requirement of approximate equal aggregate value for the overall exchange, the revested lands and the national-forest lands, administrative jurisdiction of which is exchanged in any county, shall be approximately equal in area unless otherwise agreed to by the counties concerned. The exchanges provided for in this section shall in each case be evidenced by an order signed by the Secretary of the Interior and the Secretary of Agriculture and such orders shall be transmitted to the Division of the Federal Register for filing and publication. June 24, 1954, c. 357, sec. 2, 68 Stat. 271.

Sec. 1181i. Designation of national-forest areas within counties; disposition of revenues; approval by court

For the purpose of consolidating and thereby facilitating administration and accounting the Secretary of Agriculture is authorized to designate in the several counties in which the lands described in section 1181g of this title are situated (such designation to be published in the Federal Register), an area of national-forest land of a value substantially equal to the value of the lands in such county from which all revenues shall be disposed of in accordance with the provisions of section 1181f of this title, and upon such designation the provisions of said section shall be applicable to the lands so designated in lieu of the lands described in section 1181g of this title: Provided, however, That such designation shall not become effective until approved by the county court of the county in which the lands are located. June 24, 1954, c. 357, sec. 3, 68 Stat. 271.

Sec. 1181j. Appropriations to carry out sections 1181h and 1181i

For the purpose of carrying out the provisions of sections 1181h and 1181i of this title there are authorized to be appropriated such sums as the Congress may from time to time determine to be necessary. June 24, 1954, c. 357, sec. 4, 68 Stat. 272.



*Report of the
College of Forest Resources,
and
Northwest Policy Center
University of Washington*

EXHIBIT "B"

Social Impacts of Alternative Timber Harvest Reductions on Federal Lands in O & C Counties

*Report for the Association of
O & C Counties*

June, 1991

Social Impacts of Alternative Timber Harvest Reductions on Federal Lands in O and C Counties

Robert G. Lee
Paul Sommers
Helen Birss
Christine Nasser
Jan Zientek

**Final Report
for the
Association of O and C Counties**

*by the
College of Forest Resources, and
Northwest Policy Center
University of Washington*

June, 1991

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SOCIAL IMPACTS OF ALTERNATIVE TIMBER HARVEST REDUCTIONS ON FEDERAL LANDS IN O AND C COUNTIES

EXECUTIVE SUMMARY

County governments and school districts in 18 Oregon counties depend on a share of receipts from federal timber sales on national forests and O & C lands. Ten counties derive between 25 to 66 percent of their income from federal timber sales. Anticipated reductions in federal timber harvesting will substantially impair the capacity of these counties to provide services at the same time that economic dislocation will cause a sharp increase in needs for local services. Although state and federal programs normally cover unemployment compensation, welfare, and a substantial position of health care costs, increases in rural poverty, homelessness and economic stress are likely to place an even greater burden on county governments.

Implementation of the ISC (Interagency Scientific Committee) recommendations for preserving the Northern Spotted Owl could reduce county revenues by as much as 23 percent. More extreme alternatives now under consideration would have even greater revenue impacts. Anticipated revenue reductions would necessitate reductions in hours of service, full-time positions, total workforce, and road construction. There would be substantial reductions in public health services, law enforcement and social services. Preventative health-care programs, youth services, and community museums and parks would be most adversely impacted. Yet these are the same programs that are most needed to mitigate the impacts of unemployment and economic dislocation. Anticipated increases in rural poverty and homelessness could result in increased needs for food, clothing, shelter, counseling, and law enforcement.

The tendency for state and federal governments to rely largely on *laissez faire* approaches to the social impacts of the timber supply crisis is contributing to human suffering and the long-term social costs of rural poverty. Reactive retraining and relocation social programs will be only partially successful in mitigating these impacts. A truly proactive strategy addressing the political causes for this social and economic stress would be required to minimize human suffering and promote the long-term revitalization of these timber-dependent communities.

A proactive approach would suggest that the federal government could substantially reduce the severity of both immediate impacts and long-term social costs by assuming responsibility for its role in causing substantial regional social and economic stress. Proactive strategies might include more purposeful regulation of the rate and extent of harvest reductions, adequate compensation for adversely impacted citizens, maintenance of county revenues sufficient for meeting basic human needs, and comprehensive social and economic development programs that build upon the entrepreneurial capabilities and spirit of rural people.

INTRODUCTION

A share of receipts from federal timber sales has been a major source of revenue for county governments in Oregon. For example, during 1990 Coos, Curry, Douglas, Jackson, Josephine, Klamath, Lane, Linn, and Tillamook counties depended on federal timber revenues for more than 25 percent of their county income (See Table 1). Although timber sales revenues fluctuated with the business cycles affecting the wood products industry, recent political developments have raised questions about the stability of timber revenues by proposing substantial reductions in timber harvesting on public lands.

Habitat protection for the Northern Spotted Owl (*Strix occidentalis*) will result in substantial reductions of timber harvests in western Oregon. Estimates of timber harvest reductions on public lands recommended for owl conservation by the Interagency Scientific Committee (ISC--Thomas Report)¹ total 23 percent. The listing of the Northern Spotted Owl as a threatened species requires development of a recovery plan that will include recommendations for protecting old-growth forests as preferred habitat for the owl. The Fish and Wildlife Service has recently recommended that the area to be included in any recovery plan needs to be far larger than that recommended by the ISC. There is also substantial Congressional interest in preserving much of the remaining old-growth forest. Congressman Jontz's old-growth bill could reduce harvest by 39 percent.

There are two major federal land ownerships in the areas of western Oregon most affected by habitat protection and old-growth preservation: Oregon and California (O & C) lands and national forests. The O & C lands (including the Coos Bay Wagon Road lands) originated from railroad grants that were repossessed by the federal government when the land was not sold to the settlers as directed in the grant. O & C lands are managed by the Bureau of Land Management (BLM)² and occupy 2,563,604 million acres in 17 western and 1 eastern Oregon counties. Fifty percent of O & C, and 25 percent of national forest gross timber sale receipts are transferred to counties as part of the federal government's responsibility as non-tax-paying landowners. Additionally, 6.5 percent of receipts from harvest of Coos Bay Wagon Road lands are transferred to two counties. This report estimates the likely revenue losses from reductions in timber sales on both O & C lands and the national forests in these counties.

Twenty-five percent of gross receipts from national forest timber sales are distributed to counties for support of roads and schools. In Oregon, 75 percent of these receipts are by law allocated to roads and 25 percent to schools. Some Oregon counties have received permission from the State to re-allocate road funds to schools; Curry county is the only O & C county to do so. Gross receipts from O & C lands are

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- 1 Jack Ward Thomas, Eric D Forsman, Joseph B. Lint, B. Charles Meslow, Barry Noon, and Jared Verner, 1990, "A Conservation Strategy for the Northern Spotted Owl," USDA, Forest Service, Portland, Oregon
 2. A portion of O & C lands are managed by the Forest Service; all receipts are disbursed through the BLM.

distributed differently, and usually go into the general fund for each of the counties. The county government includes only the county taxing districts and does not include school and other taxing districts.

Table 1. Dependency Upon Federal Timber Receipts for O & C Counties, 1990.^a

<u>County</u>	<u>Total Expenditures</u>	<u>Federal Forest Receipts</u>	<u>Federal Forest Receipts as % of Total Expenditures</u>
Benton ^b	\$ 22,863,440	\$ 3,617,230	16%
Clackamas	110,316,952	12,473,932	11%
Columbia ^b	9,233,057	2,264,169	25%
Coos ^b	24,735,992	8,143,332	33%
Curry ^b	15,848,935	10,432,503	66%
Douglas ^b	78,258,931	50,365,813	64%
Jackson ^b	49,780,189	23,716,089	48%
Josephine ^b	30,528,076	16,757,416	55%
Klamath ^b	38,263,665	19,412,306	51%
Lane ^b	141,716,019	51,366,375	36%
Lincoln	25,381,719	5,962,907	23%
Linn ^b	36,278,086	14,399,104	40%
Marion	77,581,251	5,788,610	7%
Multnomah	223,107,000	2,114,020	1%
Polk ^b	12,485,977	2,381,815	19%
Tillamook	13,785,286	3,604,932	26%
Washington	135,617,754	692,440	1%
Yamhill	19,476,121	1,618,269	8%

a. Source: Oregon County Finance Report FY 1990, Bureau of Governmental Research and Service.

b. Counties selected for this study.

Policies governing the sharing of federal timber sale revenues have been summarized in previous reports,³ and will not be discussed as part of this impact study.

This report focuses on eleven selected O & C counties and provides the best available estimates of (1) anticipated reductions in county revenue from federal timber harvest, (2) services likely to be cut back to accommodate revenue reductions from reductions in harvest off O & C lands, (3) social impacts likely to result from service cutbacks, and (4) increased social service needs resulting from economic dislocation of wood products workers. The impact of severance tax collections was not included in this analysis because of uncertainties of the private landowner's response to a price increase, uncertainties regarding the impact resulting from conservation plans, and uncertainties about the impacts of Ballot Measure 5 in Oregon.

A social and economic profile of the selected 11 counties is presented in Appendix A. When compared to the state as a whole, these counties generally have higher rates of unemployment, lower mean per capita income, greater reliance on wood products manufacturing, and lower rates of population growth.

3. Kenneth Tollenaar, 1981, "The O & C Lands" Bureau of Governmental Research and Service, University of Oregon, 1981. Also see Martha Bray and Robert G. Lee, forthcoming, "Federal Forest Revenue Sharing with Local Governments in Washington, Oregon, and California", Northwest Environmental Journal.

The results reported in this study are limited by the disadvantages of any socioeconomic impact study. Impact studies provide an anticipatory snapshot at a point in time, focus on immediate effects of social and economic changes, and are not able to predict long-term social and economic adjustments. As a result, this study cannot anticipate how some adverse effects may be moderated by compensatory processes (such as economic rejuvenation) or how adverse effects can grow worse if a downward spiral of social and economic changes takes hold.

REVENUE REDUCTIONS

In order to understand how harvest reductions will affect revenues to local governments, a two part analysis was undertaken. First, harvest level impacts were estimated for four alternatives describing varying degrees of restrictions on federal harvest levels (Appendix B). For two alternatives, estimated harvest levels were projected for the years 1991 through 1995. Second, officials in each of the 11 heavily impacted O & C counties in the study were interviewed to identify (a) issues local governments face when confronted with reductions in revenue, and (b) methods they may use to absorb or offset the losses.

Table 2. Estimated Harvest, Western Oregon

	Baseline 1983-1987 Harvest ^a <u>FY91</u>	Proposed Plans ^a <u>FY91</u>	ISC Strategy Federal Harvest Restrictions ^a <u>FY91</u>	<u>Old-Growth Protection</u> ^b	
				Vento Bill <u>FY91</u>	Jontz Bill <u>FY91</u>
Western Oregon ^c	6,096	5,851	4,713	4,600	3,700
% Change From Base		-4.0%	-22.7%	-24.5%	-39.3%
% Change From Proposed Plans			-19.4%	-21.4%	-36.8%

- a. Source: Brian J. Greber, K. Norm Johnson, Gary Lettman, "Conservation Plans for the Northern Spotted Owl and Other Forest Management Proposals in Oregon: The Economics of Changing Timber Availability", Forest Research Laboratory, College of Forestry, Oregon State University, August 1990.
- b. Source: Testimony of Wilbur R. Maki, "Economic and Social Impacts of Preserving Ancient Forests in the Pacific Northwest", and Dr. John H. Beuter, "Social and Economic Impacts of the Spotted Owl Conservation Strategy", American Forest Resource Alliance Technical Bulletin No. 9003, July, 1990.
- c. Total estimated harvest for western Oregon includes harvest on public and private lands.

Harvest Level Impacts⁴

Several studies have been performed to identify reductions in timber harvesting and corresponding reduction in employment, income, and revenues at the statewide and regional level in Oregon. These studies have identified economic impacts to areas in Oregon that may be affected by lower timber harvests

4. See Appendix C for description of methodology.

from federal restrictions. Estimated change in harvest levels are based upon a report by Brian Greber, et al.⁵ Alternatives are displayed in Table 2 for western Oregon. Total estimated harvest from this report includes harvest from public and private lands. These estimates reflect what could happen under a range of scenarios as defined in Appendix B. Harvest levels are projected to decline four percent under the Proposed Plans alternative when compared to the 1983-1987 baseline. When more stringent restrictions are placed on harvest levels under the ISC Conservation Strategy, projected harvest levels decline almost 23 percent as compared to the baseline. Harvest levels for the region decline 19 percent under the ISC Conservation Strategy when compared to the Proposed Plans alternative. The greatest declines would occur under an alternative that restricts harvest of old-growth forests on lands managed by the federal government: 39 percent declines are projected when compared to the baseline. Recent proposals for Northern Spotted Owl habitat protection issued by the U. S. Fish and Wildlife Service could reduce harvest even further by extending owl conservation to private land. Data necessary to estimate these possible reductions were not available at the time this analysis was prepared.

Timber harvest estimates by region are displayed in Table 3. Some regions and counties could experience greater impacts than others. For example, both the North Coast and South Coast regions show an increase in harvest when comparing proposed harvest levels to the baseline. In this case, increases in private and slight increases in state and BLM harvest in both regions offset reductions in harvest on National Forest and other public lands. The other regions show decreases under the two alternatives when compared to the baseline. Declines from the baseline range from 7 percent (Medford region) to 25 percent (Willamette region) under the Proposed Plans alternative. Under the ISC Conservation Strategy declines range from 23 percent (South Coast region) to 37 percent (Willamette and Roseburg regions) when compared to the baseline. All regions show decreases under the ISC Conservation Strategy alternative when compared to the Proposed plans; these range from 13 percent (North Coast region) to 26 percent (Roseburg region).

5. See Appendix D, and Brian J. Greber, K. Norm Johnson, Gary Lettman. 1990. "Conservation Plans for the Northern Spotted Owl and Other Forest Management Proposals in Oregon: The Economics of Changing Timber Availability", Forest Research Laboratory, College of Forestry, Oregon State University.

Table 3. Timber Harvest, by Region.^a
(mmbf)

	Baseline 1983-1987 Harvest	FY91 Proposed Plans	(%) (Change) (Baseline)	FY91 ISC Strategy Federal Harvest Restrictions	(%) (Change) (Baseline)	(%) (Change) (Plans)
Western Oregon ^b						
North Coast	1,289	1,684	(31%)	1,465	(14%)	(-13%)
Willamette	1,165	874	(-25%)	734	(-37%)	(-16%)
Eugene	1,247	1,104	(-11%)	842	(-32%)	(-24%)
Roseburg	1,331	1,140	(-14%)	844	(-37%)	(-26%)
Medford	496	461	(-7%)	350	(-29%)	(-24%)
South coast	568	588	(4%)	440	(-23%)	(-25%)
Regional Total	6,096	5,851	(-4%)	4,713	(-23%)	(-19%)
Eastern Oregon	1,924	1,604	(-17%)	1,588	(-17%)	(-1%)
State	8,020	7,455	(-7%)	6,301	(-21%)	(-15%)

a. Source: Greber, et al, 1990.

b. The North Coast region is comprised of 8 counties: Clatsop, Columbia, Tillamook, Yamhill, Polk, Lincoln, Benton, and Washington. The Willamette region is comprised of 5 counties: Multnomah, Hood River, Clackamas, Marion and Linn counties. The Eugene region consists of Lane county. The Roseburg region consists of Douglas county. The Medford region is comprised of 2 counties: Josephine and Jackson counties. The South Coast region is comprised of 2 counties: Coos and Curry counties.

Historic and estimated future harvest levels of the two major federal land managers (under proposed plans) between 1983 and 1995 are displayed in Tables 4 and 5. Table 5 shows slight change in forest service harvest under the proposed plans after 1992, and no change over time for BLM. Under the ISC Conservation Strategy federal harvest is reduced in 1992, followed by slight changes for forest service harvest, and no changes for BLM harvest. The 1991 figures are based on planned harvest for the agencies. The full impact of conservation plans will not be felt until 1992 because of current timber sales under contract. The total harvest figures for both tables include harvest on public and private lands.

Table 4. Historic Harvest Levels
mmbf

Western Oregon	1983-1987 ^a	1989	1990
Forest Service	2,013	2,302 ^b	1,617 ^b
BLM	918	1,348 ^b	944 ^b
Total	6,096	5,994 ^a	c

a. Source: Oregon State Forestry Department; Greber, et al, (and supporting workpapers) 1990.

b. Source: Respective agencies. BLM estimates include harvest from O & C, Coos Bay Wagon Road, and public domain lands.

c. Not available

Table 5. Estimated Future Harvest 1991-1995, Forest Service and BLM lands, Western Oregon ^a
mmbf

Proposed Plans

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
FS	1,579	1,361	1,358	1,356	1,353
BLM	983	983	983	983	983
Total	5,851	5,611	5,549	5,516	5,511

ISC Conservation Strategy

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
FS	1,108	727	726	725	723
BLM	361	318	318	318	318
Total	4,713	4,336	4,293	4,172	4,147

- a. Source: Greber, et. al.(and supporting workpapers), 1990; D.M. Adams and R.W. Haynes, "The 1980 Softwood Timber Assessment Market Model: Structure, Projections and Policy Simulations", Forest Science 26(3), monograph 22, 1980; and R.W. Haynes and D.M. Adams, "Simulations of the Effects of Alternative Assumptions on Demand-Supply Determinants on the Timber Situation in the United States", USDA Forest Service, Forest Resources Economics Research, Washington D.C., U.S. Government Printing Office, 1985.

Estimates of harvest levels for different scenarios and estimates of stumpage prices are factors used in determining revenue impacts. Additionally, potential stumpage price changes affected by availability of timber will factor into estimates of revenue impact. Table 6 displays historic, current and projected stumpage prices for public lands in Western Oregon. Recent research has found that anticipated shortages of timber indicates rapidly rising stumpage prices in the Pacific Northwest⁶. Current uncertainties in public policy have elevated stumpage prices to near historic highs. In the long run it is unlikely that these prices can persist. When compared to the baseline, prices are estimated to increase by 26 percent between 1991 and 1995 under the Proposed Plans alternative. Under the ISC Conservation Strategy, prices are estimated to increase by 45.5 percent between 1991 and 1995.

Although a short term increase in the stumpage price may offset some of the impact from reductions in harvest, these price increases may also make Northwest firms less competitive in national and world markets. This could reduce the capacity of the industry by forcing many timber harvesting firms out of the market. Some of these longer term impacts to prices are not known, nor are the impacts of competing product markets outside this region. Uncertainty about both the availability of timber supplies, and long run price of timber makes projecting future prices difficult at best. And consequently, it is difficult to predict changes in federal receipts from the harvest of timber. The tables presented here show a

6. Greber, et al., 1990.

range of estimates based on information available at this time, and can not be considered the only possible outcome.

Table 6. Historic, Current, and Projected Stumpage Prices, Westside
\$/mbf

	<u>Historic</u>		<u>Current</u>	<u>Projection^a</u>			
				<u>1991</u>		<u>1995</u>	
	Historic Average ^b			Proposed	ISC Cons.	Proposed	ISC Cons.
	<u>(1983-1987)</u>	<u>1988^b</u>	<u>March 1991^c</u>	<u>Plans</u>	<u>Strategy</u>	<u>Plans</u>	<u>Strategy</u>
Forest Service	\$109	\$153	\$291	\$205	\$230	\$258	\$335
BLM	\$115	\$128	\$241	\$196	\$219	\$246	\$319

a. Greber, et al, 1990. Stumpage price index, public lands, western Oregon, 1988 dollars.

b. Respective agencies average harvest price/mbf, Western Oregon.

c. Timber Data Company, Stumpage Price Report based on bid sales, March 1991.

The federal government receives payment for timber at the time of harvest; and since timber contracts are of varying lengths (up to 3 to 5 years), revenues during any one year of harvest can consist of prior year(s) timber sales and corresponding bid value/mbf. Because of this uncertainty and because it is too early in the fiscal year to know the total amount of timber receipts that will be collected during 1991, a range of possible impacts are estimated from the harvest levels from Table 5 and current and projected stumpage prices from Table 6. This range of estimates can then be compared to the timber harvest receipts of the federal agencies in 1990. These are shown in Table 7. Under the Proposed Plans alternative, the decrease in harvest and increase in price result in a one percent to 30 percent decline in total receipts to the Forest Service and a five percent decline to a 19 percent increase in total receipts to the BLM. Under the ISC Conservation Strategy alternative, however, the increase in stumpage price does not offset the loss of lower harvest: total receipts are reduced by 31 to 48 percent for the Forest Service, and 50 to 61 percent for the BLM.

Table 7. Estimated Receipts to the Federal Government, by Alternative.

	<u>1990^a</u>	<u>March 1991</u>		<u>1991 Projected</u>		<u>1995 Projected</u>	
		Estimated Harvest	Estimated Receipts	Estimated Harvest	Estimated Receipts	Estimated Harvest	Estimated Receipts
<u>Proposed Plans</u>	<u>(\$million)</u>	<u>(mmbf)^b</u>	<u>(\$million)^c</u>	<u>(mmbf)^b</u>	<u>(\$million)^d</u>	<u>(mmbf)^b</u>	<u>(\$million)^d</u>
Forest Service	\$464.2	1,579	\$459	1,579	\$324	1,353	\$349
BLM	\$204.5	983	\$237	983	\$193	983	\$242
<u>ISC Conservation Strategy</u>							
Forest Service		1,108	\$322	1,108	\$255	723	\$242
BLM		361	\$87	361	\$79	318	\$101

- a. Total timber harvest receipts in 1990 as reported by the Forest Service and BLM, western Oregon.
b. Greber, et al., 1990, Adams and Haynes, 1980; Haynes and Adams, 1985.
c. Timber Data Company, 1991.
d. Greber, et al., 1990, in 1988 dollars.

The 1991 Federal Appropriations Bill specifies new procedures in calculating federal payments to counties. Informally referred to as the "90 percent legislation", Sections 315 and 316 apply to O & C lands and national forests affected by decisions related to the Northern Spotted Owl. The legislation specifies that the fiscal year 1991 payments to counties will not be less than 90 percent of the average annual payments to counties based on receipts collected during fiscal years 1988 through 1990. There is a provision that the payments would not exceed the amount of total receipts collected during fiscal year 1991, creating the possibility that receipts could be substantially reduced if judicial actions interrupt the sales scheduled for harvesting during 1991. Table 8 displays how payments to counties are calculated under two scenarios and Table 9 displays payments to counties based on 90% of the three year average. This legislation and these procedures only affect the payment levels in 1991; calculation of payments in subsequent years will revert to the formulas used prior to 1991.

Table 8. Calculation of 1991 Payments to Counties.

<u>IF</u>		<u>THEN PAYMENT IS BASED UPON</u>
25% of FS FY 91 Receipts	≥ 90% of 3 year average	25% of FS FY 91 Receipts
50% of BLM FY 91 Receipts		50% of BLM FY 91 receipts
25% of FS FY 91 Receipts	< 90% of 3 year average	90% of 3 year average
50% of BLM FY 91 Receipts		

Table 9. 1991 Payments to Counties from Federal Timber Harvest Receipts.^a
Based on 90% of the three year average.

County	BLM	Forest Service ^b
Benton	\$ 2,714,542	\$ 405,913
Columbia	1,990,020	0
Coos	5,699,572	672,507
Curry	3,526,006	4,787,838
Douglas	24,199,030	18,899,325
Jackson	15,137,676	4,968,294
Josephine	11,669,632	2,599,172
Klamath	2,260,508	13,404,829
Lane	14,751,265	28,166,579
Linn	2,550,317	9,409,125
Polk	2,086,623	7,914
Subtotal	\$86,585,191	\$83,321,496
Oregon	\$96,602,913	\$137,244,798

a. Based on the 1991 Federal Appropriations Bill; Forest Service, and BLM data.

b. Estimated 25% fund for only those forests affected by decisions related to the Northern Spotted Owl.

REDUCTION IN SERVICES

Historic and current (county government FY 1990-1991) O & C federal timber harvest revenues to counties were analyzed in order to identify the dependence on and distribution of federal timber harvest revenues. This research analyzed patterns of revenue distributions to county budgets and specific departments and programs that depend on federal timber harvest revenues. Fiscal analysis and interviews with county commissioners and budget officers were used to assess where budget cuts might occur, which departments and programs could be affected, and which services could be adversely impacted by a reduction in revenue.

Most of the eleven counties covered by this report deposited O & C revenues directly into their General Fund to support basic county government services. To accurately assess which programs and services would be most affected by decreases in federal timber receipts, the research team estimated the indirect reliance upon O & C and USFS revenues of each general fund department and each special fund. Since O & C revenues are not tied to specific funds and departments, these relationships (taking into consideration other sources of revenue) were estimated for purposes of this analysis. The researchers take full responsibility for the estimates of the distribution of O & C revenues, as well as estimates of the distribution of reductions, and recognize that these allocations may be different under the normal budget and deliberation process. Worksheets describing these relationships were prepared for use in the interview process (Appendix E). Table 10 shows estimates of the distribution of O & C receipts by department in the

county budgets. Within each county's budget, reliance upon federal timber receipts varied among departments and funds.

Table 10. Interviewee Estimates of Relative Dependency upon O & C Revenues of Selected County Government Departments in 1990-1991

Department ^a	Benton	Columbia	Coos	Curry	Douglas ^b	Jackson	Josephine	Klamath	Lane	Linn	Polk
Assessor	4%	9%	4%	4%	3%	5%	4%	6%	12%	11%	10%
District Attorney	4	6	2	3	2	3	4	5	7	6	6
Law Enforcement	16	20	10	12	16	22	23	33	29	23	26
Commissioners	5	4	2	3	1	1	0	2	1	2	3
Treasurer/Finance	3	3	1	1	2	2	1	2	6	1	3
County Clerk/Elections	2	4	3	1	1	2	2	3	0	4	4
Parks/Museums	2	1	5	2	3	3	4	2	0	5	0
Health ^c	27	N/A	15	18	0	31	23	7	5	6	0
County Counsel	1	2	1	0	0	1	1	0	1	2	0
Juvenile	2	4	4	4	1	3	4	6	0	3	0
Planning	N/A	8	1	0	2	5	2	2	0	4	3
Library	0	0	0	0	4	0	4	6	0	0	0

a. Not all county budgets defined departments similarly.

b. FY 89-90 figures.

c. Includes Mental, Public, Environmental.

These worksheets were used to assist county officials in estimating and identifying the budget items most likely to be affected by decreases in federal timber receipts. Using these FY 90-91 estimates as a base, a 10 percent and 50 percent decline in O&C receipts was apportioned among each county's departments and funds. Rather than assume an across-the-board proportional decrease in revenues to each department, the study team interviewed County Commissioners and budget officers to determine which departments would most likely absorb the reductions in federal timber receipts. Responses were prompted through an informal checklist of questions which included concerns such as:

- Which programs and services (and what levels) are mandated by the state, and as such cannot be readily reduced?
- Which programs receive federal and state grants or matching funds and will thus be threatened by a reduction in county funding?
- Which general fund transfers are essentially "pass-through" monies which cannot be reallocated (i.e. for debt service)?
- Which departments can raise fees for services to increase their revenues?
- What other opportunities are available to offset losses in revenue?

- Which departments or programs can best absorb a staff reduction without seriously depleting service delivery capacities?

Guided by these questions and worksheets, public officials indicated which departments would be most affected by future declines in federal timber harvest revenues, and thus were able to discuss which services and programs might be reduced or cut completely out of the budget. Commissioners and budget officers were asked to consider the impacts to their budget of both a 10 percent decline as well as a 50 percent decline in federal forest receipts. The results of this process are shown in Appendix E.

Most of the counties interviewed had considered a 10 percent reduction in federal timber revenues when they prepared their FY 91-92 budgets. A range of strategies was discussed in the meetings held in the 11 counties. Some of the counties indicated that they could reduce capital purchases to absorb the 10 percent reduction, and no further reductions would be required. Other counties indicated a combination of actions that could likely occur if revenue from federal timber harvest receipts was reduced by 10 percent. Some of these actions involved reducing jobs, hours that services are offered, and capital purchases. These reductions generally occurred in non-mandated programs first, with an emphasis on maintaining the availability of essential services. In some cases the 10 percent reduction was closer to an across the board cut.

However, a pattern emerged throughout the interview process: even if all programs were reduced, mandated programs were reduced less than others. Some departments consisted of both mandated and non-mandated programs; in a few counties this was the case in the Sheriff's department: the Sheriff is mandated, but the deputies are not. In these cases, some services could be lost, and cutbacks to non-mandatory programs could affect the provision of mandatory services and programs. Among such departments identified in the interview process were:

- Law Enforcement
- County Counsel
- Health

Table 11 illustrates the range of reductions for departments with mandated, non-mandated programs, or a combination. Most of the county officials interviewed indicated that there would be some reduction in the workforce for the county. There was great concern about maintaining employment levels in spite of any reduction in revenue. Suggested methods of resolving this were:

- Shorten the hours of service for some county offices.
- Convert some full-time personnel to part-time.
- Reduce the workforce through natural attrition, vacated positions would not be filled.

Table 11. Range of Estimates: Percent Change in response to a 10% and 50% Decline in O & C Revenues^a

<u>Mandated Departments</u>	10 % decline	50% decline
Assessor	0-5 % ^b	7-50 %
District Attorney	0-11	0-50
Finance/Treasurer	0-11	4-57
County Clerk/Elections	0-11	10-75
Board of Commissioners	0-10	0-50
<u>Nonmandated Departments</u>		
Parks	11-20 %	50-100 %
Library	10-13	50-100
Veterans Services	10-13	43-100
<u>Partially Mandated</u>		
Law Enforcement	5-11 %	40-65 %
Health	0-11	42-87
County Counsel	10-13	25-50
Planning	0-11	4-75
Juvenile	5-11	40-50

a. Source: Individual county budgets

b. Indicates average range of decline in apportioned O & C revenues.

In discussing a 50 percent reduction, most of the county officials indicated that this could seriously impact all programs, and the cuts could be closer to an across the board cut. This level of reduction could eliminate certain programs, or if not eliminated, some programs would be reduced to only maintenance levels (parks, museum). However, as with the 10 percent reduction described above, certain mandated programs could be cut less than others. At this level of reduction services could be dramatically reduced. Because of this concern some counties indicated that they would consider combining departments that offered similar services. Another method of adjusting to such a drastic reduction was to phase in the reductions over time for some of the programs that provided critical services such as law enforcement, health and social services. Under a 50 percent reduction in federal revenues, county officials indicated that government workforce would be reduced. In addition to reducing hours of service, converting to part-time employment, and encouraging natural attrition, the following methods of adjusting to this level of reduction in revenue were mentioned:

- Satellite offices would be closed.
- Funding would no longer be available for continuing education for county employees (such as health care providers).
- Service such as home visit programs would be cut.

- County employment levels would be reduced through layoffs.

Under both a 10 percent and 50 percent reduction, several methods of offsetting these reductions were discussed. Some counties, programs and departments could directly raise fees, while in other counties raising fees to fund programs would require approval through the ballot process. There was some discussion about the potential opportunities to reduce costs by jointly sharing services and, consolidating city and county programs. An additional comment indicated the possible need to resize the county government to fit the reduced revenue streams.

SOCIAL IMPACTS OF SERVICE REDUCTIONS

Reduction in county revenue will make it more difficult for counties to provide essential public health, law enforcement, and public services—especially at a time when increased unemployment and economic dislocation will cause growth in the demand for such services. Most of the social services needed to address problems of unemployment and economic stress have been provided by the State and federal governments. It is unclear whether additional State and federal funding will be adequate to meet the needs of people affected by timber harvest reductions.

This report focuses instead on the impact of revenue reduction on services that have been provided by counties. Some of these services have been provided by counties through programs funded in large part by State and federal funds. However, the social service needs of county residents could increase substantially if State and federal governments do not adequately fund unemployment insurance, human services, public health care, mental health counseling, housing assistance, and other services essential for helping people cope with economic stress.

Unlike revenue and employment impacts, no models exist for estimating social impacts caused by economic stress. We have relied instead on the estimates of county officials and literature on the effects of economic stress. As a result, this report provides only a general indication of some of the possible impacts.

Any reduction in social services is likely to have adverse impacts on individuals, families and local communities. This diminished capacity to provide social services is occurring at a time when new demands upon social services will very likely result from sharp increases in the number of people unemployed and dislocated by a decline in the wood products economy. Moreover, these same local social services have been seen as vital for helping communities make a transition from heavy reliance on timber to a more diversified economic base.⁷

In addition to interviewing county commissioners and budget officers, we interviewed county health, education, and law enforcement officials. Results from estimates of reduced services (See Appendix

⁷ Ed Whitelaw and Ernie Niemi. 1990. "Investing in Dislocated Families: Developing a Legislative Program for Timber-dependent Communities and for dislocated Workers and Families in Oregon." Report submitted to Oregon Joint Interim Committee on Forest Products Policy, ECO Northwest, Eugene, Oregon.

F) were compared with the assessments of people directly responsible for administering social service programs. Following are the results from these assessments.

Public health services provided by counties have come to play the role of health care provider of last resort, attending to emergency and chronic health care problems for the poor and unemployed who cannot secure treatment through the private sector. Examples of the most likely impacts in health services include:

- elimination of all preventative care, including some immunization programs
- reduction of pre-natal care (resulting in the greater frequency of more costly at-risk births)
- closure of satellite health centers and reduction of visiting nurse services (denying health care to more isolated and less mobile residents) resulting in increased health problems when people delay seeking treatment
- rationing of health care, with priority to life-threatening problems
- reduction in substance abuse programs, including counseling and treatment

Law enforcement problems can be expected to increase because of reductions in social and health services. Local administrators in law enforcement, public health, and mental health all commented on how past economic downturns have been accompanied by increases in substance abuse, DWT's, family violence, and property crimes. During the past decade, progress had been made toward addressing the problems of domestic violence and alcohol and drug abuse through programs such as crisis hot-lines for youths and adults, shelters for victims of domestic violence, and alternative treatment and sentencing programs. This multi-faceted approach had proven to be an effective community response to these complicated problems. While many of these programs rely on federal, state or private grants, almost all depend on county revenues to cover administrative and capital costs. Local law enforcement officials have also commented upon the supportive role these services play in the community, and how interconnected these services have become with the traditional role of the sheriff. Yet it is this first line of community defense that is most threatened by fiscal retrenchment.

Social services most effected are those that benefit the youth. Cuts in agricultural extension, including 4-H, recreation programs, and youth services designed to prevent delinquency or redirect the lives of those who had encountered problems were mentioned by almost all counties. Youth programs are essential for helping young people whose home life has been disrupted by economic stress or worry about unemployment and financial disaster. Social problems with youth are already evident in many impacted rural timber - dependent towns.

These cutbacks in community services tend to erode essential community institutions and the *esprit de corps* of a community, and can result in a weakened sense of pride and identity. Communities suffering from such weaknesses in central institutions (e.g. community colleges, fairs, and museums) are

less capable of mobilizing their citizens to voluntarily address common problems resulting from decline in the wood products economy and county revenues. Moreover, individuals and families having difficulty coping with stress are less likely to receive support from neighbors or voluntary associations when the sense of community declines⁸.

RESPONSE TO INCREASED SOCIAL SERVICE NEEDS

Economic dislocation and unemployment caused by the timber supply restrictions will very likely result in a dramatic increase in the need for social services. Employment impacts in the wood products industry, indirect employment impacts, and total impacts are displayed in Tables 12-14. Individual county estimates of employment impacts were derived by disaggregating employment impacts identified in the report by Greber et al.⁹ Employment impacts are displayed for two alternatives and represent employment levels supported by total harvest. Total employment impacts include direct and indirect impacts and are shown in Table 12. Some regions along the I-5 corridor or with larger cities or metropolitan areas show growth potential that absorbs some of the direct employment impacts. Direct employment impacts to the timber industry are shown in Table 13. Under the Proposed Plans alternative there are some positive employment impacts. However, these employment increases projected by the Greber model are temporary and are due to assumptions about the differences between actual harvest and planned harvest, and anticipated increases in short-term private harvesting.

Since welfare, worker retraining, and other necessary services are provided by the State of Oregon, counties have not conducted any needs assessments to anticipate increases in demands for social services normally provided by the State. Although the Oregon Joint Interim Legislative Committee on Forest Products Policy sponsored a study of retraining needs for dislocated wood products workers,¹⁰ there has been little effort to assess the health, welfare, counseling, education, or law enforcement needs that may result from such a large displacement of people.

Some indication of the magnitude of social costs associated with economic dislocation can be gained from a recent study of social costs associated with timber industry job losses in Washington State.¹¹ An analysis predicted that total additional social costs in unemployment insurance, welfare, social security, training, wages lost, and taxes lost would total \$165.6 million within the first year for the dislocation of 7,560 timber industry workers. This estimate did not include the increased costs of psychological

8 See especially Janet M. Fitchen. 1987. "When Communities Collapse: Implications for Rural America." Human Services in Rural Environments 11(1):48-57. Also see Michael Hibbard 1986. "Community Beliefs and Failure of Community Economic Development". Social Science Review (five): 184-200.

9 Greber, et al., 1990.

10 Jill Bowling. 1991. "Desk Top Analysis". Final Report of the Joint Interim Committee on Forest Products Policy. Oregon State Legislature, Salem, Oregon

11 Steven Rose. 1991. Draft report on social costs of timber industry job losses in Washington State submitted to Governor Gardner's Timber Team.

counseling, law enforcement, education, or loss of asset value in homes, businesses, and equipment. It also did not consider the social costs of indirect job losses, or many of the other less easily measured costs.

Table 12. Impacts to Total Employment.^a
(wage and salary employees)

	Continuing with 1983-1987 <u>Harvest</u>	Proposed <u>Plans</u>	ISC Strategy Federal Harvest <u>Restrictions</u>	<u>Employment Impact</u>	
				<u>Proposed Plans</u>	<u>ISC Strategy</u>
Western Oregon					
Portland					
Washington	152,531	152,150	151,200	-380	-1,331
Multnomah	441,192	440,091	437,341	-1,100	-3,851
Yamhill	24,164	24,104	23,953	-60	-211
Clackamas	<u>103,91</u>	<u>103,655</u>	<u>103,007</u>	<u>-259</u>	<u>-907</u>
	721,800	720,000	715,500	-1,800	-6,300
Salem					
Polk	10,349	10,378	10,463	28	114
Marion	<u>98,851</u>	<u>99,122</u>	<u>99,937</u>	<u>272</u>	<u>1,086</u>
	109,200	109,500	110,400	300	1,200
Northwest					
Clatsop	17,066	17,127	16,926	60	-141
Columbia	11,136	11,175	11,044	39	-92
Tillamook	7,127	7,152	7,069	25	-59
Lincoln	16,605	16,664	16,469	59	-137
Benton	<u>33,065</u>	<u>33,182</u>	<u>32,793</u>	<u>117</u>	<u>-272</u>
	85,000	85,300	84,300	300	-700
Linn/Lane					
Linn	36,786	36,242	35,358	-544	-1,428
Lane	<u>125,514</u>	<u>123,658</u>	<u>120,642</u>	<u>-1,856</u>	<u>-4,872</u>
	162,300	159,900	156,000	-2,400	-6,300
Roseburg/Douglas	35,400	34,400	32,400	-1,000	-3,000
Medford					
Josephine	21,688	21,584	20,912	-104	-776
Jackson	<u>62,112</u>	<u>61,816</u>	<u>59,888</u>	<u>-296</u>	<u>-2,224</u>
	83,800	83,400	80,800	-400	-3,000
South Coast					
Coos	21,440	21,440	20,738	0	-702
Curry	<u>6,060</u>	<u>6,060</u>	<u>5,862</u>	<u>0</u>	<u>-198</u>
	27,500	27,500	26,600	0	-900

a. Adapted from Greber et al.

Table 13. Impacts to Wood Products Employment. ^a
(wage and salary employees)

	Continuing with 1983-1987 <u>Harvest</u>	Proposed <u>Plans</u>	ISC Strategy Federal Harvest <u>Restrictions</u>	<u>Employment Impact</u>	
				Proposed <u>Plans</u>	ISC <u>Strategy</u>
Western Oregon					
Portland					
Washington	2,807	2,761	2,622	-46	-186
Multnomah	3,577	3,518	3,341	-59	-237
Yamhill	2,410	2,370	2,251	-40	-159
Clackamas	<u>3,305</u>	<u>3,251</u>	<u>3,087</u>	<u>-55</u>	<u>-219</u>
	12,100	11,900	11,300	-200	-800
Salem					
Polk	776	731	665	-44	-111
Marion	<u>2,724</u>	<u>2,569</u>	<u>2,335</u>	<u>-156</u>	<u>-389</u>
	3,500	3,300	3,000	-200	-500
Northwest					
Clatsop	1,140	1,212	1,121	72	-18
Columbia	1,742	1,852	1,714	111	-28
Tillamook	598	636	589	38	-9
Lincoln	705	750	694	45	-11
Benton	<u>2,115</u>	<u>2,249</u>	<u>2,082</u>	<u>134</u>	<u>-34</u>
	6,300	6,700	6,200	400	-100
Linn/Lane					
Linn	4,664	4,308	3,786	-357	-878
Lane	<u>12,336</u>	<u>11,392</u>	<u>10,014</u>	<u>-943</u>	<u>-2,322</u>
	17,000	15,700	13,800	-1,300	-3,200
Roseburg/Douglas	9,200	8,600	7,500	-600	-1,700
Medford					
Josephine	2,151	2,096	1,820	-55	-331
Jackson	<u>5,649</u>	<u>5,504</u>	<u>4,780</u>	<u>-145</u>	<u>-869</u>
	7,800	7,600	6,600	-200	-1,200
South Coast					
Coos	3,004	3,077	2,711	73	-293
Curry	<u>1,096</u>	<u>1,123</u>	<u>989</u>	<u>27</u>	<u>-107</u>
	4,100	4,200	3,700	100	-400

a. Adapted from Greber et al.

Table 14. Indirect Impacts Employment. ^a
(wage and salary employees)

	Continuing with 1983-1987 <u>Harvest</u>	Proposed Plans	ISC Strategy Federal Harvest <u>Restrictions</u>	<u>Employment Impact</u>	
				<u>Proposed Plans</u>	<u>ISC Strategy</u>
Western Oregon					
Portland					
Washington	149,724	149,390	148,578	-334	-1,146
Multnomah	437,614	436,573	434,000	-1,041	-3,614
Yamhill	21,754	21,733	21,702	-20	-52
Clackamas	<u>100,609</u>	<u>100,404</u>	<u>99,920</u>	<u>-205</u>	<u>-688</u>
	709,700	708,100	704,200	-1,600	-5,500
Salem					
Polk	9,474	9,646	9,798	172	324
Marion	<u>95,926</u>	<u>96,554</u>	<u>97,602</u>	<u>628</u>	<u>1,676</u>
	105,400	106,200	107,400	800	2,000
Northwest					
Clatsop	15,927	15,915	15,804	-12	-122
Columbia	9,394	9,323	9,330	-71	-64
Tillamook	6,529	6,516	6,480	-13	-49
Lincoln	15,900	15,914	15,774	14	-126
Benton	<u>30,950</u>	<u>30,932</u>	<u>30,711</u>	<u>-18</u>	<u>-239</u>
	78,700	78,600	78,100	-100	-600
Linn/Lane					
Linn	32,121	31,934	31,571	-187	-550
Lane	<u>113,179</u>	<u>112,266</u>	<u>110,629</u>	<u>-913</u>	<u>-2,550</u>
	145,300	144,200	142,200	-1,100	-3,100
Roseburg/Douglas	26,200	25,800	24,900	-400	-1,300
Medford					
Josephine	19,537	19,488	19,091	-48	-445
Jackson	<u>56,463</u>	<u>56,312</u>	<u>55,109</u>	<u>-152</u>	<u>-1,355</u>
	76,000	75,800	74,200	-200	-1,800
South Coast					
Coos	18,436	18,363	18,028	-73	-409
Curry	<u>4,964</u>	<u>4,937</u>	<u>4,872</u>	<u>-27</u>	<u>-91</u>
	23,400	23,300	22,900	-100	-500

a. Adapted from Greber et al.

Application of this method to the 7,096 jobs projected to be lost under the ISC alternative in the eleven O & C counties of Oregon predicts that social costs would total at least \$155.4 million for the first year alone. These costs would diminish over time, but most likely continue to accumulate for several years following each major incident of job displacement.

Health, education, and law enforcement administrators in each of the eleven O & C counties were interviewed to determine whether any local needs assessments were being conducted in preparation for anticipated economic dislocations. Results from these interviews are summarized in Appendix F. Results showed that neither counties nor the State have assigned any agencies the responsibility for monitoring anticipated increases in social needs. Private care-giving agencies were also contacted in each county to determine their possible role in needs assessment.

County officials and private care-giving agencies are already aware of increases in human suffering, but report they have only had the capability to address approximately 20-25 percent of pre-existing social needs. Additional needs will clearly exceed the capacity of these already over-stressed institutions. We have concluded that an undetermined number of dislocated workers and bankrupt proprietors will disappear into an "invisible sink" and end up destitute, homeless, or, if fortunate, employed at a new job at far lower wages.

The magnitude of the economic losses and social costs has already created a situation characterized by substantial collective stress among residents of timber-dependent communities throughout western Oregon. Such large-scale collective stress is best characterized as a human-caused "disaster situation".¹²

Barton states that:

Collective stress occurs when many members of a social system fail to receive expected conditions of life from the system. These conditions of life include the safety of the physical environment, protection from attack, provision of food shelter and income, and guidance and information necessary to carry on normal activities.¹³

Failure to receive expected conditions of life can originate from "unfavorable changes in the environment...floods, droughts, earthquakes...loss of markets or *source of supply*."¹⁴ Or they can originate internally from "economic breakdowns such as depression, inflation, or strikes, and *political breakdowns*..¹⁵

A disaster situation is further defined as one in which identifiable causal agents limit or deny realization of expectations, resulting in final cumulative and overwhelming stress in a community. Earlier studies of adversely impacted timber-dependent communities report people have failed to receive expected conditions and identified what people perceived to be the causal agents for overwhelming stress: threats to

12 Alan H. Barton. 1970. Communities in Disaster: A Sociological Analysis of Collective Stress Situations. Garden City, New York: Doubleday.

13 Ibid., p. 38

14 Ibid., (emphasis added)

15 Ibid., (emphasis added)

jobs, income, and independent businesses; failure to receive expected wood supplies (long guaranteed to the government's sustained-yield plans); failure to receive respect for their personal integrity as morally responsible members of society; failure to receive sympathy for the suffering inflicted by the loss of jobs and lack of respect.¹⁶

By comparison, the Washington State floods of last winter caused \$ 41 million in property damage and took one life. There was an outpouring of sympathy and a national disaster was declared to provide support for rebuilding. Similar disasters have led policy analysts to suggest mitigation strategies appropriate for such disasters. Yet there has been little effort by State or federal officials to develop strategies for the planned disaster inflicted on timber-dependent communities.¹⁷

Stress resulting from job losses alone can be experienced as a life-threatening event¹⁸ that can have severe consequences for the individual and the community.¹⁹ Depression and other mental illnesses are the most frequently observed consequences of unemployment.²⁰ Individuals with a prior history of mental illness are most susceptible to economic instability, and will be among the first in need of assistance.²¹ In fact, lower educational levels are associated with higher use of mental health services²² -- indicating that low levels of education limit both options and capacity to be successfully reemployed during periods of economic instability.

Other manifestations of mental illness, i.e., spouse or child abuse, alcohol and drug abuse, and social conflict also increase in response to rising unemployment.²³ Increased demands for medical services also accompany economic downturns and unemployment.²⁴ The reported incidences of heart trouble, hypertension, bone and joint ailments, and chronic headaches all increase during periods of economic

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- 16 Robert G. Lee. 1990. "Social and Cultural Implications of Implementing a Conservation Strategy for the Northern Spotted Owl". Independent report prepared for Mason, Bruce and Girard, Portland, Oregon. Also see Robert G. Lee, Matthew S. Carroll, and Kristen K. Warren. 1991. "The Social Impact of Timber Harvest Reductions in Washington State". Chapter 3 in Paul Sommers and Helen Birss (eds.) *Revitalizing the Timber Dependent Regions of Washington*. Final Report for the Washington Department of Trade and Economic Development. Northwest Policy Center, Institute for Public Policy and Management, Graduate School of Public Affairs, University of Washington, Seattle.
 - 17 Lee, Carroll, and Warner, 1991.
 - 18 Billie Zeller Lawson, 1987. "Work-related Post-traumatic Stress Reactions: the Hidden Dimension." *Health and Social Work* Fall:250-258.
 - 19 Margaret W. Linn, Richard Sandifer and Shaynal Stein. 1985. "Effects of Unemployment on Mental and Physical Health." *American Journal of Public Health*
 - 20 Linn, et al., 1985; Stanislav Kasl, Susan Gore, and Sidney Cobb. 1975. "The Experience of Losing a Job: Reported Changes in Health Symptoms and Health Behavior." *Psychosomatic Medicine* 37(2):51-59; and Ralph Catalano and David Dooley. 1981. "The Behavioral Costs of Economic Instability." *Policies Studies Journal*, 10(2): 338-349.
 - 21 Paul Ahr, Michael J. Gorodezky and Dong Won Cho. 1981. "Measuring the Relationship of Public Psychiatric Admissions to Rising Unemployment." *Hospital and Community Psychiatry* 32(6):398-401.
 - 22 Philip W. Barling and Paul Handal. 1980. "Incidence of Utilization of Public Mental Health Facilities as a Function of Short-term Economic Decline." *American Journal of Community Psychology* 8(1):31-39.
 - 23 Paula S. Armstrong and Michael D. Schulma. 1990. "Financial Strain and Depression Among Farm Operators: The Role of Perceived Economic Hardship and Personal Control." *Rural Sociology* 55(4):475-493; Kasl, et al., 1975; and Edward C. Weeks And Sandra Drencacz. 1983. "Rocking in a Small Boat: The Consequences of Economic Decline in Rural Communities." *International Journal of Mental Health* 12(1-2):672-75.
 - 24 Kasl, et al., 1985; Catalano and Dooley, 1981; Kessler, et al., 1987; and Linn, et al., 1985.

instability.²⁵ People experiencing high levels of stress often suffer from impairment of the cognitive functioning required for retraining or making other changes in their lives. Extreme work-related stresses can produce symptoms resembling the "delayed stress syndrome" from which so many Viet Nam veterans suffered.²⁶ When coupled with stress originating from the blaming of loggers and other wood products workers, loss of way of life, and betrayal by government, many individuals are likely to suffer from both a loss of self-esteem and an impaired capacity to recover.²⁷ Their capacity to make rational decisions about retraining, moving, or shifting occupations can be substantially reduced by such an accumulation of stress.

CONCLUSIONS

Revenue and Service Reductions

Anticipated revenue declines resulting from reductions in federal timber harvesting will substantially impair the capacity of counties to provide essential services. Preventative health-care programs, law enforcement, youth services, and community museums and parks would be most adversely impacted by revenue reductions. These impacts would take place at the same time that economic dislocation will cause a sharp increase in needs for local and State services. Although State and federal programs normally cover unemployment compensation, welfare, and a substantial portion of health care costs, anticipated increases in rural poverty and homelessness could result in increased needs for food, clothing, shelter, counseling, and law enforcement.

The lack of adequate disaster planning by state and federal governments could place counties in the difficult position of having to respond to substantial increases in unmet human needs. The fact that so many State programs are designed for meeting the needs of unemployed workers rather than independent proprietors or the chronically unemployed and homeless will further complicate the problems of effective service delivery. Public and private care-giving agencies in counties may increasingly find themselves providing health services, food, clothing, and emergency shelter for those who have fallen through the federal and State social safety nets, as well as facing increased demands for law enforcement and social intervention services. All these additional demands will most likely accumulate in those counties suffering from the greatest declines in federal timber sales revenue.

Since there are no well tested models upon which this assessment could be based, a far more thorough assessment needs to be made of the demands likely to be placed on local care-givers, law enforcement, and other service agencies. Current State and federal planning may turn out to be totally

25 Carl D'Arcy and C.M. Siddique. 1985. "Unemployment and Health: An Analysis of 'Canada Health Survey' Data." International Journal of Health Services 15(4):609-635.

26 Lawson, 1987.

27 Robert J. Lifton and Eric Olson. 1976. "The Human Meaning of Total Disaster: The Buffalo Creek Experience." Psychiatry 399 (February):1-19; and Elmer Luchterhand. 1971. "Sociological Approaches to Massive Stress in Natural and Man-Made Disasters." Pp. 29-33 In Henry Krystal and William G. Niederland, (eds.), Psychic Traumatization in Individuals and Communities. Boston: Little Brown and Company.

inadequate. Financially stressed counties could end up bearing much of the exceptionally heavy social and economic costs associated with sudden timber harvest reductions.

Policy Options for Mitigating Social Impacts

Three approaches to mitigating economic dislocation and the high levels of stress it causes are available to policy makers: (1) do nothing (*laissez faire*), (2) reactive, and (3) proactive. Elements of all three approaches were evident in the O & C counties studied.

These approaches are actually a continuum of responses with a *de facto laissez faire* rationale at one end and a proactive rationale at the other. The *laissez faire* approach is a common response during times of fiscal retrenchment when institutional capacities are severely limited by financial resources. Moving closer to the center are the reactive programs in which the worker is treated as an object to be placed within an evolving economic order. Reactive programs tend to target specific workers, and a limited choice for education or retraining is offered. Finally, at the other end of the continuum, proactive social services are designed to help individuals increase their capacity to adapt to change so that they can become more effective in creating their own opportunities.

Laissez Faire Approach

A decision to do nothing to assist dislocated workers and proprietors is based on the assumption that individuals are responsible for meeting their own needs. The absence of a needs assessment and the inability of community leaders to raise State or local revenues adequate to meet needs shows that the *laissez faire* policy is perhaps by default the dominant approach to O & C counties by State and federal governments. Large numbers of men, women and children are left to fend for themselves during periods of prolonged unemployment. No public or private agencies have a clear idea what is happening to the unserved segment of the population, although there is common speculation that many people are moving to the Portland area, California, or Washington. Many will be forced to abandon their homes or other fixed assets when they can't afford to continue making payments and no buyers are available. The ultimate expression of the *laissez faire* philosophy appears to be the expectation that individuals will move in search of a situation in which to survive.

Other labor-intensive sectors of the Oregon economy have in the past been able to absorb some of the more mobile members of the workforce in the wood products industry.²⁸ However, the cheaper labor provided by migrant agricultural workers now establishing year-round residence in Oregon, competes far

28 Joe Stevens. 1974. The Oregon Wood Products Labor Force: Job Rationing and Worker Adaptations in a Declining Industry. Corvallis, Ore.: Oregon State University Agriculture Experiment Station, Special Report No. 529. For another view of social adjustment of economic decline, see Edward Weeks. 1983. Plant Modernization and Community Economic Stability. Eugene, Oregon, University of Oregon, Bureau of Government Research.

more effectively for low-wage jobs. This creates a situation in which two politically under-represented groups are forced to work for wages far below what is necessary to support a family.

Reactive Approach

Reactive social services attempt to help dislocated workers adapt to a change after it has happened; retraining following a layoff is the most common example.²⁹ Individual workers tend to be viewed as "raw material" (or human resources) for the economy, and the role and needs of independent entrepreneurs tend to be ignored.

Most federal and state policies for aiding dislocated workers are reactive, including Oregon's response to the timber industry workers.³⁰ This response is thought to be the most cost-effective strategy for the State. Community stability is affirmed as being in the best interests of all people in Oregon, since the health, well-being, and prosperity of individuals living in the rural communities are seen as essential to the welfare of the entire State. However, these laudable goals are not matched by programs that can promote community stability. Contemplated dislocated worker programs are designed to prepare dislocated individuals for employment that for the most part exists outside the rural towns of Oregon. Fewer individuals and families will be able to remain in their traditional home towns while pursuing economically rewarding work. It is difficult to imagine how community stability can be fostered by the largely reactive approach recommended by Whitelaw and Niemi.³¹

Attempts by the State to diversify local economies also reflect the reactive approach. A shift in wood manufacturing to an emphasis on value-added production and recruitment of other manufacturing industries (especially electronics) are examples of such anticipated diversification. However, experience in the Pacific Northwest and elsewhere has shown that isolated, resource-dependent rural communities are far less likely to attract such activities than urban settings near transportation and manufacturing nodes.³²

Proactive Approach

The aim of proactive social services is to help individuals increase their capacity to adapt to change so that they can become more effective in creating their own opportunities.³³

In a proactive approach individuals are introduced to educational processes that can help them understand the context of the problems confronting them, and to at least attempt to anticipate how they can

29 Catalano and Dooley, 1981. Also see discussion of local community ideologies that can foster reactive approaches in Michael Hibbard and Lori Davids, 1989. "When the Going Gets tough: Economic Reality and Cultural Myths of Small Town America APA Journal (Autumn): 419-428.

30 Whitelaw and Niemi, 1990. Also see Jill Bowling, 1991. Final Report of the Joint Interim Committee on Forest Products Policy. Joint Interim Committee on Forest Products Policy, Salem, Oregon.

31 Whitelaw and Niemi, 1990.

32 Polzin, Paul E., 1990 "The Spatial Distribution of Wood Products Industries." 8 pages plus table. Independent paper prepared for Mason, Bruce and Girard. Available from the American Forest Resource Alliance, Washington, D.C.

33 Catalano and Dooley, 1981. Also see Michael Hibbard, 1981. "The Crisis in Social Policy Planning." Social Science Review (December):557-567.

best respond. This process requires individuals to examine the causes of problems, and consider options over which they may have control. Basic appreciation and respect for the affected communities is inherent to the process. Thus a proactive approach will favor policies that address the causes for the social, psychological and economic disorder created by sudden timber harvest reductions.

Evidence of a proactive response to change is the increasing level of enrollment in community colleges and technical schools that began with the economic downturn in the wood products industry during the early 1980's. Employed and unemployed women and men saw the economic turmoil in their lives as a harbinger of future shifts in the wood products industry -- a future that appeared to hold a diminished role for themselves. During this process of change many people turned to public education. These individuals sought new skills and higher levels of education as a means for realizing their future, and hoped that future work would provide opportunities for their continued residence in the communities of rural Oregon. In this situation the individual citizen enacts a decision to become a nurse, carpenter, computer programmer, welder or student, and does not forfeit individual initiative to an expert who "engineers" change in people's lives. The form and direction of change in the community remains a local initiative and responsibility.

Proactive social services are consistent with the values and context of rural communities, where individualistic and entrepreneurial traditions run deep. This emphasis on entrepreneurial initiative would also most closely match the traditional culture of timber-dependent communities³⁴ and would favor programs to adapt and enhance entrepreneurial skills indigenous to rural Oregon. It would also seek to provide access to the capital and technology necessary for expanding opportunities in local communities.

A proactive response to the problems of timber-dependent communities will attempt to provide members of these communities with the flexibility of choosing or creating their role in a new economic situation. Additionally, the proactive approach favors the development of stronger communities in which individuals can work together to create shared responsibility for creating a better future through renewed interdependence and common action. However, novel social development strategies may often be needed to overcome self-fulfilling prophecies of failure.³⁵

The proactive approach also favors policies that would address the causes for the social, psychological and economic disorder created by sudden timber harvest reductions. Political decisions to reallocate federal assets is the primary cause for the adverse social, economic and fiscal impacts summarized in this report. Government policy makers need to connect decisions to suddenly reduce federal timber harvesting with likely social and economic consequences. The federal government is ultimately responsible for these consequences, either by anticipating the effects of its actions or by paying far higher long-term costs of alleviating rural poverty and local financial stress.

A proactive approach would suggest that the federal government could substantially reduce the severity of both immediate impacts and long-term social costs by assuming responsibility for its role in

34 Robert G. Lee, 1990.

35 Hibbard and Davis, 1986.

causing a major regional social and economic disaster. Proactive strategies might include more purposeful regulation of the rate and extent of harvest reductions, adequate compensation for adversely impacted citizens, maintenance of county revenues sufficient for meeting basic human needs, and comprehensive social and economic development programs that build upon the entrepreneurial capabilities and spirit of rural people.

Appendix A

Profile of Selected O & C counties

The 1990 populations of the eleven counties ranged from 19,000 in Curry county to 283,000 in Lane county (TABLE A-1). Population density averaged about 35 people per square mile and was highest in Benton county, at 104 people per square mile (TABLE A-2). The total population of these counties fell during the early part of the 1980's, but began to grow again in 1986 (Figure A-1). The total population of Oregon exhibited the same trends, but grew more quickly during the latter part of the decade (Figure A-2).

The mean per capita income of the O & C counties was \$13,055, substantially lower than the state average of \$14,881 (TABLE A-3). Josephine county had the lowest mean per capita income, at \$10,763. Total personal income for the O&C counties equalled 12.7 billion, approximately 31 percent of the state's total personal income (TABLE A-5).

Over 42,000 people in the O & C counties were employed in the lumber and wood products manufacturing sector in 1989, representing about 10 percent of the O & C counties total employment (TABLE A-4). In 1989, the overall unemployment rate for these eleven counties was over 9%, while the average rate in Oregon was 5.7% (TABLE A-5). The total number of unemployed in the O & C counties gradually declined from its peak of 68,000 in 1982 (Figure A-3), but during the 1980's the average unemployment rate of the O & C counties was consistently higher than that of Oregon's (Figure A-4).

Table A-1. Total Population by County, 1990

County	Population
Benton	70,811
Columbia	37,557
Coos	60,273
Curry	19,327
Douglas	94,649
Jackson	146,389
Josephine	62,649
Klamath	57,702
Lane	282,912
Linn	91,227
Polk	49,541
O & C Total:	973,037
Oregon Total	2,847,000

Source: Center For Population Research and Census, Portland State University, 1990

Table A-2. Population Density by County, 1990

County	Density (people per sq. mile)
Benton	104.29
Columbia	54.67
Coos	37.00
Curry	11.73
Douglas	18.66
Jackson	52.26
Josephine	38.18
Klamath	9.41
Lane	61.24
Linn	39.72
Polk	66.50
O & C Total:	34.81
Oregon Average	29.33

Figure A-1. Total Population in the O & C Counties,
1980-1990

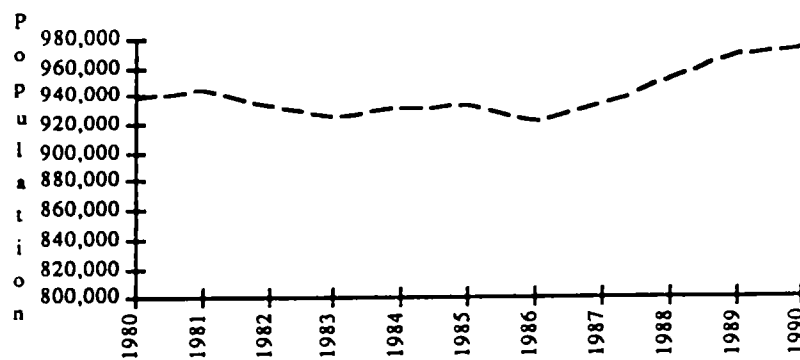


Figure A-2. Population in the O & C Counties and Oregon, 1980-1990

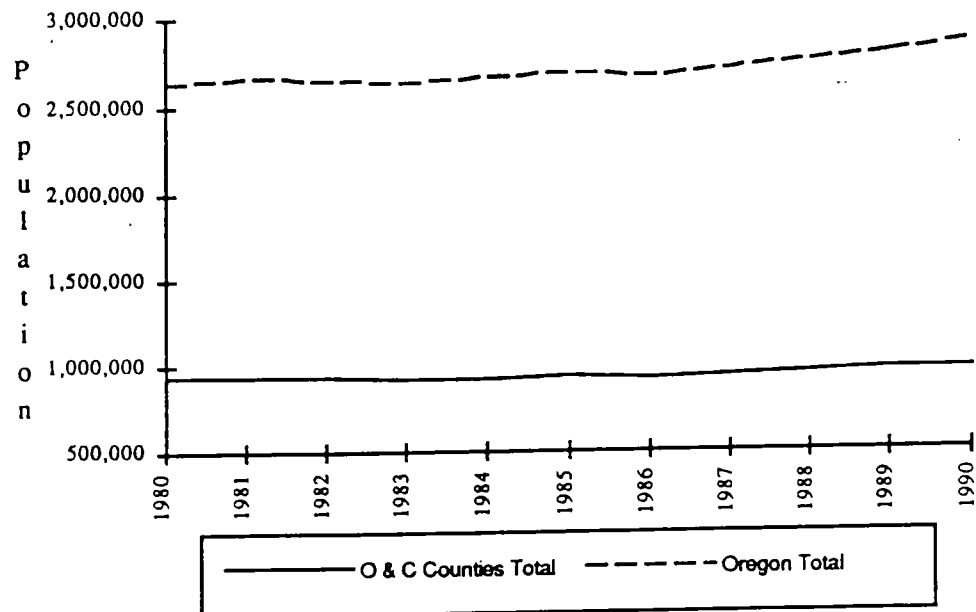


Table A-3. Total Personal Income and Per Capita Income by County, 1988

County	Total Personal Income (in millions)	Mean per Capita Income
Benton	\$1,006	\$15,453
Columbia	\$497	\$13,017
Coos	\$785	\$12,921
Curry	\$248	\$13,199
Douglas	\$1,230	\$12,821
Jackson	\$1,932	\$13,249
Josephine	\$765	\$10,763
Klamath	\$722	\$12,547
Lane	\$3,774	\$13,973
Linn	\$1,118	\$12,272
Polk	\$626	\$12,924
O & C Total:	\$12,703	\$13,055
Oregon Average	\$41,170	\$14,881

Source: U.S. Bureau of Economic Analysis

Table A-4. Total Employment and Lumber & Wood Products (Sector 24) Employment by County

County	Total Employment	Sector 24
Benton	36,520	1,520
Columbia	16,220	1,260
Coos	24,890	2,570
Curry	9,050	930
Douglas	42,250	7,910
Jackson	67,840	5,820
Josephine	25,130	2,230
Klamath	24,030	3,740
Lane	139,100	11,200
Linn	40,360	4,370
Polk	10,194	884
O & C Total	435,584	42,434
Oregon Total	1,391,000	66,900

Source: Oregon Department of Human Resources, Employment Division

Table A-5. Unemployment in the O&C Counties, 1989

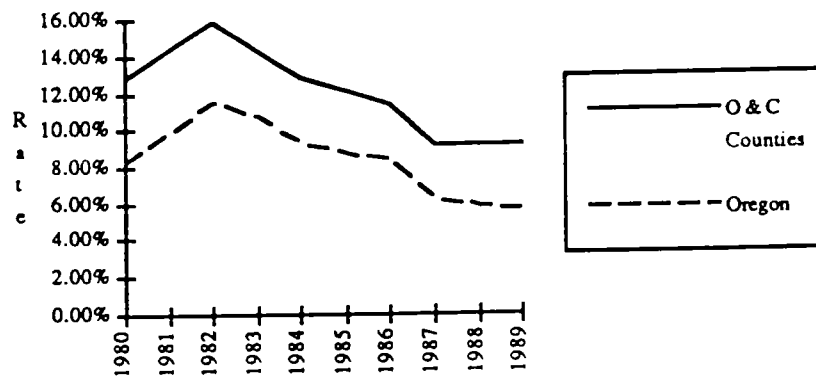
County	Number of Unemployed	Rate
Benton	1,310	3.50%
Columbia	1,260	7.20%
Coos	2,690	9.80%
Curry	620	6.40%
Douglas	3,570	7.80%
Jackson	4,920	6.80%
Josephine	2,110	7.70%
Klamath	2,040	7.80%
Lane	8,200	5.60%
Linn	3,290	7.50%
Polk	13,820	6.20%
O & C Total	43,830	9.10%
Oregon Total	84,000	5.70%

Source: Oregon Department of Human Resources, Employment Division

Figure A-3. Total Unemployment in O & C Counties,
1980-1989



Figure A-4. Unemployment Rates, 1980-1989



Appendix B

Description of alternatives

Proposed harvest level before the ISC recommendations. This alternative describes the harvest levels under currently proposed plans for land management. Harvest levels were estimated for National Forests, Bureau of Land Management (BLM), State and other public lands, and private lands.

ISC Conservation Strategy. This alternative describes the harvest levels for national forest and BLM lands recommended by the Interagency Scientific Committee resulting from their study "A Conservation Strategy for the Northern Spotted Owl", 1990. Under this alternative, only federal harvest levels are affected, and private levels of harvest remain at the levels identified under the first alternative.

Old-growth protection. Two versions of the old-growth alternative are presented to show estimated harvest levels under two Ancient Forest Bills: the Vento Bill and the Jontz Bill. Both bills would restrict timber harvest more than that recommended by the ISC Committee. Estimates indicate the Jontz Bill would set aside more old-growth than the Vento Bill.

An alternative that was considered but not selected was an alternative describing the harvest levels from private lands given a higher short term stumpage price. This alternative was addressed in the report by Greber et. al., but was not selected as part of this project for these reasons:

- This alternative may not present a current or future scenario. There is indication that the short term price response may have already occurred between the time the Oregon State report was released and the publication of this report.
- Prices, markets and the state of the economy need to be taken into account to properly model the price response. The price and market for logs/timber at the stump, the price and market for wood products, and an economic recession all has to be taken into account.

Appendix C

Economic Impacts

The following sources of data and information were used to calculate economic impacts as shown in this report.

Brian J. Greber, K. Norm Johnson, Gary Lettman, "Conservation Plans for the Northern Spotted Owl and Other Forest Management Proposals in Oregon: The Economics of Changing Timber Availability", Forest Research Laboratory, College of Forestry, Oregon State University, August 1990.

Testimony of Wilbur R. Maki, Ph.D., "Economic and Social Impacts of Preserving Ancient Forests in the Pacific Northwest".

D.M. Adams and R.W. Haynes, "The 1980 Softwood Timber Assessment Market Model: Structure, Projections and Policy Simulations", Forest Science 26(3), monograph 22, 1980; and R.W. Haynes and D.M. Adams, "Simulations of the Effects of Alternative Assumptions on Demand-Supply Determinants on the Timber Situation in the United States", USDA Forest Service, Forest Resources Economics Research, Washington D.C., U.S. Government Printing Office, 1985.

Oregon Department of Human Resources, Employment Division, Research and Statistics section, unpublished data.

Most of the economic impact data used in this report came from the report by Greber, et al. Some of the information displayed in this report was supplied by Brian Greber out of research materials that support the data published in his report. Harvest levels for all ownerships for the Proposed Plans alternative, and the ISC Strategy alternative shown in the text of this report are directly sourced from his published materials. Harvest levels for Forest service and BLM lands under the two alternatives were from Brian Greber's supporting research materials. In order to include an Old-Growth alternative harvest level estimates by Wilbur R. Maki, Ph.D were used. Dr. Maki's estimates cover the three state region affected by spotted owl conservation recommendations, and Dr. John Beuter's report for the American Forest Resource Alliance and estimates of ancient forest acreages from The Wilderness Society were used to estimate harvest levels for Oregon.

This report presents estimated harvest levels for all timberland ownership in Western Oregon under each of the three alternatives. It further discusses estimated harvest levels by region for two of the alternatives. Estimated harvest levels between 1991 and 1995 are presented in order to estimate revenue

reductions over the five year time frame. In order to estimate 1991 harvest and to separate the federal ownership from other ownership, research materials from Dr. Greber's supporting data were used. Annual estimates beyond 1991 were calculated using the Timber Assessment Market Model (TAMM)¹ which computes harvest levels for four types of ownership over time and for alternatives. For purposes of this analysis annual percentage changes from TAMM were applied to the 1991 level of harvest to estimate harvest levels out to 1995. The TAM Model shows slight change in forest service harvest under the proposed plans after 1992, and no change over time for BLM. Under the ISC Conservation Strategy federal harvest is reduced in 1992, followed by slight changes for forest service harvest, and no changes for BLM harvest.

Employment Impacts

To determine direct employment impacts for each county in this study, direct employment impacts from the report by Greber et. al. were disaggregated to each county in each sub-region. The county employment levels (Covered Employment, Sector 24)² were used to proportion the region employment impacts to each county. Although Wage and Salary employment impacts are shown in the table, Covered Employment data was used to disaggregate the data because more complete county by county employment data was available.³ Employment impacts are displayed for two alternatives and represent the employment levels supported by total harvest.

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1. D.M. Adams and R.W. Haynes, "The 1980 Softwood Timber Assessment Market Model: Structure, Projections and Policy Simulations", Forest Science 26(3), monograph 22, 1980; and R.W. Haynes and D.M. Adams, "Simulations of the Effects of Alternative Assumptions on Demand-Supply Determinants on the Timber Situation in the United States", USDA Forest Service, Forest Resources Economics Research, Washington D.C., U.S. Government Printing Office, 1985.
 2. "Oregon Covered Employment and Payrolls by Industry and County," Employment Division, Department of Human Resources, 1989.
 3. Wage and Salary employment data was not available for Polk and Marion Counties separately.

Appendix D

Selection of an Impact Report

Several studies have been performed to identify reductions in timber harvest and corresponding reduction in employment, income, and revenues at the statewide and regional level in Oregon. These studies have identified economic impacts to areas in Oregon that will be faced with lower timber harvests from federal restrictions. Three recently published economic impact reports were reviewed¹ and one was selected for use in this report. The three reports covered impacts to regions within Oregon, and tested alternatives of reduced harvest for two basic scenarios: the proposed Forest Service and BLM plans and the estimated federal harvest under the Interagency Scientific Committee (ISC) recommendations². Two of the reports included alternatives that estimated impacts to private land. An alternative estimating impacts resulting from protecting old growth was not discussed in any of the three reports.

The report that provided the information and data for this study is the report by Greber et al.³. This report by Greber et al. has compatible regions and alternatives to the areas and alternatives under study in this report. Consistent with Greber's report is the use of the baseline defined as the 1983-1987 annual average harvest. The use of this baseline was chosen because it represents a fairly stable harvest level during a time when there were no extreme high or low levels of timber harvest. Because harvest levels in the early eighties were abnormally low, and 1988 and 1989 levels were abnormally high, no single historical year is a good basis for comparison. Three alternative scenarios have been identified for use in this study:

- 1) Proposed harvest level before the ISC recommendations,
- 2) ISC alternative that identifies federal harvest reductions, and
- 3) Old-growth protection

Three types of impacts are presented: (1) harvest impacts, (2) employment impacts, and (3) revenue impacts. Harvest level impacts are presented for all alternatives, employment and revenue impacts will be presented for only two alternatives: Proposed plans, and ISC Strategy.

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1. a. USDA Forest Service/USDI Bureau of Land Management, "Economic Effects of Implementing a Conservation Strategy for the Northern Spotted Owl", May 1990.
b. Brian J. Greber, K. Norm Johnson, Gary Lettman, "Conservation Plans for the Northern Spotted Owl and Other Forest Management Proposals in Oregon: The Economics of Changing Timber Availability", Forest Research Laboratory, College of Forestry, Oregon State University, August 1990.
c. Douglas C. Olson, "Economic Impacts of the ISC Northern Spotted Owl Conservation Strategy for Washington, Oregon, and Northern California", Mason, Bruce and Girard for American Forest Resource Alliance, June 1990.
 2. Jack Ward Thomas, "A Conservation Strategy for the Northern Spotted Owl," Portland, Oregon: Interagency Scientific Committee to Address the Conservation of the Northern Spotted Owl, April 2, 1990.
 3. Greber, et al.

Appendix E

INDIVIDUAL COUNTY BUDGET WORKSHEETS

The estimates of budgetary impacts presented in this appendix are the result of a three stage process. First, all federal forest revenues were identified in the FY 1990-1991 budgets for the selected counties, and reliance upon these revenues was estimated. The relationship was relatively straightforward for forest service payments to counties: generally 75% of the forest service payments go to the county school fund, and 25% of the payments go to the road fund (in some counties the payments went into the public works fund). The relationship was more difficult to identify for O & C payments because these payments are made to the general fund. Several departments rely on general fund revenues; individual departments and their reliance upon only the O & C portion was not defined. In order to estimate the reliance upon O & C revenue at the department level, the O & C portion of the general fund revenues were proportioned to the departments and programs within the general fund (taking into consideration other sources of revenue). This was the basis for estimating both the reductions in revenues, and the reductions in services. No county budget was the same; there were many differences among the budgets including the departments, programs and funds that make up the budgets. Because this analysis used budgeted figures, actual revenue and expenditure figures for FY 1990-1991 will differ from those displayed in this appendix.

Second, an across-the-board 10% and 50% reduction in federal forest receipts was calculated from the proportions described above. And third, these estimates were discussed with county officials to determine the likelihood of these reductions, and the services reduced under these assumptions. The county officials' responses ranged from using the across-the-board estimates, to reducing only capital purchases. Some departments and programs were reduced more than others, and some were not altered at all. The results of this interview process can be reviewed in the following pages.

Appendix E

INDIVIDUAL COUNTY BUDGET WORKSHEETS

Table E-1. Benton County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Benton County

Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest reductions on federal lands in O & C counties. (Estimates based on Benton County 1990-91 budget)

Total Appropriated Budget (All Funds)	31,074,122
Total Operating Budget	23,941,973
Total General Fund	19,290,368
Total Unrestricted Revenues (Gen. Fd.)	11,851,835
Total O&C to General Fund	2,769,090
Total Proportion of GF Unrestricted	23.4%
Total O&C Revenue	2,900,000
Total Forest Service Revenue	370,000
Total Federal Revenue	3,270,000
Federal Timber Revenue as % of Total Budget	10.5%

GENERAL FUND DEPARTMENTS AND SERVICES BUDGET

DEPT DESCRIPTION	——— REVENUES ———			ESTIMATED UNRESTRICTED SUPPORT	SUPPORTING SHARE OF O&C REVENUES	10%	50%
	ADOPTED APPROPRIATION	ESTIMATED FEES	ESTIMATED DEDICATED			PROPORT. REDUCTION IN O&C REV.	PROPORT. REDUCTION IN O&C REV.
NON DEPTMTAL SERV.	3,120,515		142,843	2,977,672	695,710	(90,151)	(347,859)
OSU ENTERP. OFFICER	55,000		55,000	0	0	0	0
COUNTY EXT. SERVICE	129,370			129,370	30,226	(3,917)	(15,113)
ANIMAL DAMAGE CTL.	15,000			15,000	3,505	(454)	(1,752)
NON-DEPARTMENTAL	3,319,885	0	197,843	3,122,042	729,441	(94,521)	(364,721)
DEVELOPMENT ADMIN.	240,962	33,150	8,200	199,612	46,638	(2,332)	(23,319)
BLDG. REG. & CODE SERV.	209,503	154,293	55,210	0	0	0	0
DEVELOPMENT	450,465	187,443	63,410	199,612	46,638	(2,332)	(23,319)
MANDATORY SERVICES	106,959			106,959	24,990	(12,495)	(12,495)
STATE COURTS	106,959	0	0	106,959	24,990	(12,495)	(12,495)
APPRAISAL	850,800	4,450	210,887	635,463	148,471	(7,424)	(74,236)
ASSESSMENT	850,800	4,450	210,887	635,463	148,471	(7,424)	(74,236)
CRIMINAL ENFORCE.	562,195	5,500	87,000	469,695	109,741	(5,487)	(54,870)
VICTIM-WITNESS ASSIST.	40,634		10,000	30,634	7,157	(358)	(3,579)
VICTIM OF CRIME ACT GR.	22,340		22,340	0	0	0	0
CHILD SUPP. ENFORCE.	111,811		72,419	39,392	9,204	(460)	(4,602)
DISTRICT ATTORNEY	736,980	5,500	191,759	539,721	126,102	(6,305)	(63,051)
JUVENILE	397,250		20,603	376,647	88,001	(4,400)	(44,000)
JUVENILE DIVERSION	93,342		93,342	0	0	0	0
JUVENILE	490,592	0	113,945	376,647	88,001	(4,400)	(44,000)
ADMINISTRATION	185,349	7,100	12,672	165,577	38,686	(5,013)	(19,343)
SPECIAL PROJECTS	1,380	0	1,380	0	0	0	0

DEPT	DESCRIPTION	——— REVENUES ———			ESTIMATED UNRESTRICTED SUPPORT	SUPPORTING SHARE OF O&C REVENUES	10% PROPORT. REDUCTION IN O&C REV.	50% PROPORT. REDUCTION IN O&C REV.
		ADOPTED APPROPRIATION	ESTIMATED FEES	ESTIMATED DEDICATED				
	PATROL/INVESTIGATION	1,631,749	0	3,500	1,628,249	380,428	(49,296)	(190,214)
	JUVENILE DIVERSION	50,028		10,000	40,028	9,352	(1,212)	(4,676)
	DRUG ENFORCEMENT	24,000	0	24,000	0	0	0	0
	MARINE LAW ENFORCE.	17,833		17,000	833	195	(25)	(97)
	MONROE LAW ENFORCE.	41,801		41,801	0	0	0	0
	CTS. ENFRCE./PERS. SERV.	89,668	19,000	0	70,668	16,511	(2,140)	(8,256)
	CUSTDY & INCARC.	937,160	6,000	86,202	844,958	197,418	(9,871)	(98,709)
	ADULT CORR. RES. CTR.	90,000	0	90,000	0	0	0	0
	HOME DETENTION PRG.	92,300	12,000		80,300	18,761	(2,431)	(9,381)
	COMM. COR. ADMIN.	117,532	50,000	67,532	0	0	0	0
	SUBS. ABUSE RES. TR.	18,750		18,750	0	0	0	0
	SEX OFFEND./VOL. SUPER.	46,704		46,704	0	0	0	0
	PROGRAM COORD.	37,202		37,202	0	0	0	0
	PAROLE & PROBATION	386,406		378,846	7,560	1,766	(229)	(883)
	MISDEMEANANT PROB.	23,060	7,560		15,500	3,621	(469)	(1,811)
	EMERGENCY SERVICES	70,279		27,000	43,279	10,112	(1,310)	(5,056)
LAW ENFORCEMENT		3,861,201	101,660	862,589	2,896,952	676,851	(71,996)	(338,425)
	FINANCE ADMIN.	87,493		0	87,493	20,442	(1,022)	(10,221)
	PROPERTY TAX COLLECT.	130,427	1,000	34,409	95,018	22,200	(1,110)	(11,100)
	ACCOUNTING	223,229		3,300	219,929	51,385	(2,569)	(25,692)
	INTERNAL AUDITING	49,307			49,307	11,520	(576)	(5,760)
	INSURANCE ADMIN.	196,300		0	196,300	45,864	(2,293)	(22,932)
	SAFETY & WELLN. PRG.	14,535		0	14,535	3,396	(170)	(1,698)
FINANCE		701,291	1,000	37,709	662,582	154,807	(7,740)	(77,404)
	BD. OF EQUALIZATION	21,346		6,032	15,314	3,578	(464)	(1,789)
	RECORDS AND FILINGS	156,088	122,000	18,000	16,088	3,759	(188)	(1,879)
	RECORDS CENTER	84,281		3,000	81,281	18,991	(2,461)	(9,495)
	DOG LAWS - ENFORCE.	97,750	6,000	65,000	26,750	6,250	(312)	(3,125)
	ELECTION ADMIN.	74,565	2,500		72,065	16,837	(2,182)	(8,419)
	SPECIAL DISTRICT ELECT.	91,716		33,000	58,716	13,719	(1,778)	(6,859)
	PRIM. & GEN. ELECT.	64,339			64,339	15,032	(752)	(7,516)
RECORDS & ELECTIONS		590,085	130,500	125,032	334,553	78,166	(8,136)	(39,083)
	CORRECT. MED. SERV.	22,777			22,777	5,322	(690)	(2,661)
	INFORM. & REFERRAL	82,693	6,000		76,693	17,919	(2,322)	(8,959)
	WOMEN, INF. & CHILD.	103,283		77,696	25,587	5,978	(775)	(2,989)
	FAMILY PLANNING	251,306	95,000	77,883	78,423	18,323	(916)	(9,161)
	MATRNL/CHILD HEALTH	160,977	2,000	52,652	106,325	24,842	(3,219)	(12,421)
	COMMUN. DISEASES	325,971	80,000	57,019	188,952	44,147	(2,207)	(22,074)
	MED-INVEST./VITAL STATS.	25,781	15,000	2,600	8,181	1,911	(96)	(956)
	VISITING NURSE SERVICE	19,674	0		19,674	4,597	(596)	(2,298)
	MEDLINK	30,315		0	30,315	7,083	(918)	(3,541)
	JUVENILE SER. ADMIN.	24,000		24,000	0	0	0	0
	LAND AND WATER	175,291	40,400	8,343	126,548	29,567	(3,831)	(14,783)
	ENVIRON. PROTECT. SERV.	142,062	47,700	10,800	83,562	19,524	(2,530)	(9,762)
	SOLID WASTE NUIS. ABATE.	41,146		17,146	24,000	5,607	(727)	(2,804)
	EMERGENCY RESP. GRP.	2,000		2,000	0	0	0	0
	CORRECT.: MENTAL HLTH.	30,558	6,000	24,558	0	0	0	0
	ADULT SERVICES	263,185	60,400	103,872	98,913	23,110	(1,156)	(11,555)
	SERVICES TO CHILDREN	186,915	24,000	65,695	97,220	22,715	(1,136)	(11,357)
	DEVELOP. DISAB. PRO.	247,246	1,000	151,152	95,094	22,218	(1,111)	(11,109)
	CHEM. DEPENDENCY PRG.	192,830	40,400	152,430	0	0	0	0

DEPT	DESCRIPTION	REVENUES			ESTIMATED UNRESTRICTED SUPPORT	SUPPORTING SHARE OF O&C REVENUES	10%	50%
		ADOPTED APPROPRIATION	ESTIMATED FEES	ESTIMATED DEDICATED			PROPORT. REDUCTION IN O&C REV.	PROPOR REDUCTIO IN O&C REV.
	COMMUNITY SUPP. SERV.	354,381	7,100	347,281	0	0	0	
	SEMI-INDEPEN. LIVING	11,459		11,459	0	0	0	0
	MENTAL HEALTH ADMIN.	241,360	0	117,785	123,575	28,872	(1,444)	(14,436)
	PRE-COMMITMENT SERV.	23,734		13,239	10,495	2,452	(123)	(1,22)
	PSYC. SEC. REVIEW BD.	40,678		40,678	0	0	0	
	DU II DIVERSION PROG.	12,500	9,500	3,000	0	0	0	0
	COMM. CRISIS/RESP. CARE	68,719	900	45,885	21,934	5,125	(256)	(2,562)
	DRUG TREATMENT SERV.	130,460	19,000	98,429	13,031	3,045	(152)	(1,52)
	ALCOHOL PREVENTION	36,132	0	26,297	9,835	2,298	(115)	(1,14)
	EARLY INTERVENTION	151,513		148,224	3,289	768	(38)	(384)
	ADOLESCENT ALC. PILOT	83,450	7,000	31,400	45,050	10,526	(526)	(5,262)
	DIVERSION	31,351		31,351	0	0	0	
	SYSTEMS CHANGE GRANT	37,414		40,703	(3,289)	(768)	38	38
	FAMILY CRISIS RESPONSE	27,285	1,000	26,295	(10)	(2)	0	1
	MENTAL HLTH. SUB-CONT.	2,617,084		2,617,084	0	0	0	0
	ALSEA RURAL HEALTH	7,000			7,000	1,635	(212)	(81)
	JUVENILE SERVICES ACT	171,393		171,393	0	0	0	0
HEALTH		6,373,923	462,400	4,598,349	1,313,174	306,813	(25,055)	(153,400)
	COMM. SERV. WRK. PRGM.	34,741			34,741	8,117	(1,052)	(4,056)
	PARKS ADMINISTRATION	114,117		0	114,117	26,663	(3,455)	(13,331)
	PARKS MAINTENANCE	187,464	5,700	8,600	173,164	40,458	(5,243)	(20,22)
	GROUND MAINTENANCE	21,626		750	20,876	4,878	(632)	(2,43)
	ADAIR CLUBHOUSE OPER.	32,311	8,200	750	23,361	5,458	(707)	(2,729)
PARKS		390,259	13,900	10,100	366,259	85,574	(11,089)	(42,78)
	VETERANS SERVICES	82,515		12,500	70,015	16,358	(2,120)	(8,179)
VETERANS		82,515	0	12,500	70,015	16,358	(2,120)	(8,17)
	LEGAL COUNSEL	162,763		4,000	158,763	37,094	(4,807)	(18,547)
	LAW LIBRARY	58,300	47,300	10,000	1,000	234	(12)	(117)
COUNTY COUNSEL		221,063	47,300	14,000	159,763	37,327	(4,818)	(18,66)
	LEGISLATIVE	188,042	1,200		186,842	43,654	(2,183)	(21,827)
	GENERAL ADMIN.	208,912		50	208,862	48,799	(2,440)	(24,39)
	SPECIAL PROJECTS	53,153			53,153	12,419	(621)	(6,209)
	COMMUNITY RELATIONS	44,974			44,974	10,508	(525)	(5,254)
	GENERAL ADMIN.	135,987		100	135,887	31,749	(1,587)	(15,87)
	LABOR RELATIONS	54,419			54,419	12,715	(636)	(6,35)
	BUDGET PREPARATION	63,247		2,000	61,247	14,310	(715)	(7,155)
	DATA PROCESSING MGMT.	365,616		42,907	322,709	75,398	(9,770)	(37,699)
BOARD OF COMMISSIONERS		1,114,350	1,200	45,057	1,068,093	249,552	(18,478)	(124,77)
GENERAL FUND TOTALS		19,290,368	955,353	6,483,180	11,851,835	2,769,090	(276,909)	(1,384,54)
Target							(276,909)	(1,384,54)

NOTE: Contribution to School Fund is mandatory and irreducible

OTHER FUNDS WITH DIRECT ALLOCATION OF O&C REVENUES

	ADOPTED APPROPRIATION	ALL OTHER REVENUES		DIRECT O&C ALLOCATION	10% PROPORT. REDUCTION IN O&C REV.	50% PROPORT. REDUCTION IN O&C REV.
SCHOOL FUND	917,910	787,000	0	130,910	(13,091)	(65,455)

NOTE: Unrestricted transfer in is from Non-Departmental SPO of General Fund

Dedicated transfer in is from Parole & Probation SPO of Law Enforcement

All of these transfers are discretionary and likely to be considered first ahead of general fund services for reduction

OTHER FUNDS RECEIVING GENERAL FUND TRANSFERS

	ADOPTED APPROPRIATION	ALL OTHER REVENUES	GENERAL FUND TRANSFER IN FROM DEDICATED SOURCES	GENERAL FUND TRANSFER IN FROM UNRESTRICTED	SUPPORTING SHARE OF O&C REVENUE	10% PROPORT. REDUCTION IN O&C REV.	50% PROPORT. REDUCTION IN O&C REV.
ROAD FUND	4,819,650	4,008,650		811,000	189,484	(18,948)	(94,742)
FAIR FUND	505,059	355,025		150,034	35,054	(3,505)	(17,527)
LIBRARY FUND	704,763	0		704,763	164,662	(16,466)	(82,331)
GENERAL CAP. PROJ. FUND	564,737	120,815	30,000	413,922	96,710	(9,671)	0
ROAD IMPROVEMENT FUND	315,880	215,880		100,000	23,364	(2,336)	0
	6,910,089	4,700,370	30,000	2,179,719	509,275	(50,927)	(194,600)

Table E-2. Columbia County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Columbia County
 Estimates developed solely for the purpose of evaluating social impacts of alternative timber harvest
 reductions on federal lands in O & C counties. (Estimates based on Columbia county 1990-1991 budget)

Total Expenditures					\$14,749,389	
Gen. Fund Expenditures					\$7,453,847	
General Fund outside funding					\$1,177,222	
O&C Revenue, 1990					\$2,260,000	
O&C Revenue, Gen. Fund					\$1,846,873	
O&C Proportion of Gen. Fund (GF - outside funding)					29.4%	
National Forest Revenue					\$0	
Federal Timber Revenue as % of Total Budget					15.3%	

Timber Revenues	O&C	10% Reduction	50% Reduction
General Fund	\$1,846,873	(\$184,687)	(\$923,437)
Parks	\$100,827	(\$10,083)	(\$50,414)
Road	\$312,300	(\$31,230)	(\$156,150)
Total	\$2,260,000	(\$226,000)	(\$1,130,000)

GENERAL FUND	Expenditures	Outside Funding	General Fund Support	Supporting Share of O&C Revenues	10% Reduction	50% Reduction
Board of Commissioners	\$310,628		\$310,628	\$91,401	(\$9,140)	(\$45,701)
Assessor's Office	\$644,161	\$224,381	\$419,780	\$123,519	(\$12,352)	(\$61,759)
Accounting Dept.	\$238,191		\$238,191	\$70,087	(\$7,009)	(\$35,043)
Clerk's Office	\$150,768		\$150,768	\$44,363	(\$4,436)	(\$22,181)
Elections	\$179,936	\$53,700	\$126,236	\$37,144	(\$3,714)	(\$18,572)
Sheriff's Office	\$809,710	\$61,395	\$748,315	\$220,189	(\$22,019)	(\$110,094)
Tax Office	\$125,481		\$125,481	\$36,922	(\$3,692)	(\$18,461)
County Jail	\$652,349		\$652,349	\$191,951	(\$19,195)	(\$95,976)
Treasurer's Office	\$83,725		\$83,725	\$24,636	(\$2,464)	(\$12,318)
County Surveyor	\$29,600		\$29,600	\$8,710	(\$871)	(\$4,355)
District Attorney	\$432,284	\$102,260	\$330,024	\$97,108	(\$9,711)	(\$48,554)
Justice Court: Clatskanie	\$7,568		\$7,568	\$2,227	(\$223)	(\$1,113)
Justice Court: Vernonia	\$10,070		\$10,070	\$2,963	(\$296)	(\$1,482)
Juvenile Dept.	\$327,831	\$37,749	\$290,082	\$85,356	(\$8,536)	(\$42,678)
County Counsel	\$135,573		\$135,573	\$39,892	(\$3,989)	(\$19,946)
Div. of Land Serv. & Res.	\$44,446		\$44,446	\$13,078	(\$1,308)	(\$6,539)
Veteran's Services	\$19,278	\$12,500	\$6,778	\$1,994	(\$199)	(\$997)
County Museum	\$22,624		\$22,624	\$6,657	(\$666)	(\$3,329)
Emergency Services	\$177,748	\$162,500	\$15,248	\$4,487	(\$449)	(\$2,243)
Land Development Services	\$562,897	\$7,800	\$555,097	\$163,335	(\$16,334)	(\$81,668)
Courthouse and Grounds	\$346,429		\$346,429	\$101,935	(\$10,194)	(\$50,968)
Dog Department	\$83,147		\$83,147	\$24,466	(\$2,447)	(\$12,233)
County Dues	\$21,958		\$21,958	\$6,461	(\$646)	(\$3,231)
Civil Service Commission	\$11,902		\$11,902	\$3,502	(\$350)	(\$1,751)
Subtotal	\$5,428,304	\$662,285	\$4,766,019	\$1,402,383	(\$140,238)	(\$701,191)
Non-Departmental Payments	\$1,884,693	\$514,937	\$1,369,756	\$403,045	(\$40,305)	(\$201,523)
Trans. to School Fund	\$80,850		\$80,850	\$23,790	(\$2,379)	(\$11,895)
Trans. to Fair Fund	\$50,000		\$50,000	\$14,712	(\$1,471)	(\$7,356)
Trans. to Weed Control	\$4,500		\$4,500	\$1,324	(\$132)	(\$662)
Trans. to Watermaster	\$5,500		\$5,500	\$1,618	(\$162)	(\$809)
TOTAL	\$7,453,847	\$1,177,222	\$6,276,625	\$1,846,873	(\$184,687)	(\$923,437)

Table E-3. Coos County

Estimated Revenue Impacts of a 50% Reduction in Federal Revenues to Coos County
 Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest
 reductions on federal lands in O & C counties. (Based on Coos County 1990-1991 budget)

Total County Revenues and Expenditures	\$33,011,122
Total General Fund	\$18,296,491
O & C Revenues	\$6,400,000
O & C less transfer to Road Fund	\$5,800,000
O & C Remaining after Non-Departmental Expenditures	\$3,687,261
Remaining O & C as % of Non-Dept. + Forestry:	41.50%
\$3,687,261/(\$7,328,884 + \$1,556,081)	
National Forest Receipts	\$758,025
Federal Timber Revenues as % of Total Budget	21.68%

			Estimated Impact of a		
			Supporting	50 Percent	
GENERAL FUND			General Fund	Share of O & C	Reduction in
Department	Expenditures	Revenues	Support	Revenues	O & C Revenues
Assessors	\$819,857	\$190,066	\$629,791	\$261,363	(\$39,204)
Community Svcs	\$45,220	\$0	\$45,220	\$18,766	(\$10,781)
Commissioners	\$299,502	\$14,036	\$285,466	\$118,468	(\$29,617)
Urban Renewal	\$79,985	\$78,421	\$1,564	\$649	(\$1,564)
Personnel	\$73,961	\$0	\$73,961	\$30,694	(\$17,633)
County Counsel	\$136,963	\$0	\$136,963	\$56,840	(\$32,653)
Data Processing	\$422,758	\$48,401	\$374,357	\$155,358	(\$23,304)
County Clerks	\$300,840	\$145,694	\$155,146	\$64,386	(\$36,988)
Elections	\$237,292	\$71,114	\$166,178	\$68,964	(\$39,618)
District Attorney	\$425,325	\$96,500	\$328,825	\$136,462	(\$78,394)
Forestry	\$228,418	\$1,784,499	(\$1,556,081)	\$0	(\$22,000)
Health	\$2,795,326	\$1,764,011	\$1,031,315	\$427,996	(\$256,797)
Solid Waste	\$524,240	\$453,600	\$70,640	\$29,316	\$0
Jail	\$2,285,787	\$528,186	\$1,757,601	\$729,404	\$0
Juvenile	\$653,197	\$89,562	\$563,635	\$233,909	(\$93,563)
Children & Youth Svcs	\$216,941	\$216,941	\$0	\$0	\$0
Maintenance	\$557,949	\$0	\$557,949	\$231,549	(\$133,018)
Planning	\$262,184	\$80,000	\$182,184	\$75,606	(\$81,983)
Sheriff-Criminal	\$1,323,487	\$103,710	\$1,219,777	\$506,207	(\$853,844)
Sheriff-Svcs	\$575,148	\$163,899	\$411,249	\$170,668	(\$287,874)
Parks & Recreation	\$938,672	\$466,030	\$472,642	\$196,146	(\$236,321)
Printing	\$118,954	\$10,689	\$108,265	\$44,930	\$0
Surveying	\$173,485	\$31,000	\$142,485	\$59,131	(\$121,112)
Treasurer & Tax	\$228,253	\$139,000	\$89,253	\$37,040	(\$21,278)
Veteran's	\$61,024	\$12,500	\$48,524	\$20,137	\$20,137
Community Corrections	\$312,282	\$280,307	\$31,975	\$13,270	\$0
Non-Departmental*	\$4,199,441	\$11,528,325	(\$7,328,884)	\$2,112,739	(\$581,000)
Road Fund	\$4,157,483	\$4,157,483	\$0	\$570,000	\$0
Dog Fund	\$147,487	\$57,200	\$90,287	\$45,423	\$90,287
County Schools	\$562,685	\$417,495	\$145,190	\$73,045	\$0
Coos County Fair	\$273,000	\$263,000	\$10,000	\$5,031	\$10,000
Solid Waste Power Gen. Fund	\$10,620	\$0	\$10,620	\$5,343	\$0
TOTAL	\$18,296,491	\$18,296,491	\$0	\$5,799,999	(\$2,978,409)
FOREST SERVICE REVENUES			Forest Service	50%	
			Revenues	Reduction	
Road Fund			\$568,519	(\$284,260)	
County School			\$189,506	(\$94,753)	
TOTAL REVENUE REDUCTION					(\$3,357,421)

*Reduction also includes \$45,000 reduction in dues, \$6,000 reduction in expenses, \$10,000 less in training costs, \$220,000 decline in community support, and \$200,000 decline in Contingency & Emergency Funds.

Table E- 4a. Curry County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Curry County

Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest reductions on federal lands in O & C counties. (Based on Curry County 1990-1991 budget)

Total County Revenues and Expenditures	\$34,768,229
Total General Fund Revenues	\$8,849,624
General Fund, Non-Discretionary Revenues*	\$6,668,958
O & C Revenues	\$3,880,000
O & C as % of General Fund Non-Discretionary Revenues*	58.18%
National Forest Receipts	\$5,581,250
Federal Timber Revenues as % of Total Budget	27.21%

DEPARTMENT	Expenditures	Revenues	Estimated Impact of a		
			General Fund Transfer	Supporting Share of O & C Revenues	50 Percent Reduction in O & C Revenue
Board of Commissioners	\$298,511	\$4,260	\$294,251	\$175,618	(\$73,759)
Equalization	\$20,127	\$4,330	\$15,797	\$9,428	(\$3,819)
Children/Youth Services	\$46,473	\$59,174	(\$12,701)	\$0	\$0
Soil/Water	\$17,295	\$0	\$17,295	\$10,322	\$0
Assessor	\$379,717	\$88,330	\$291,387	\$173,909	(\$97,389)
Clerk/Elections	\$126,041	\$26,600	\$99,441	\$59,349	(\$44,512)
County Clerk	\$100,586	\$92,030	\$8,556	\$5,106	(\$12,766)
Surveyor	\$39,974	\$18,000	\$21,974	\$13,115	(\$2,623)
Treasurer	\$75,662	\$12,750	\$62,912	\$37,548	(\$28,161)
Veterans	\$22,842	\$12,500	\$10,342	\$6,172	\$0
Fiscal Services	\$195,412	\$17,110	\$178,302	\$106,416	(\$43,110)
Computer Services	\$732,116	\$77,150	\$654,966	\$390,903	(\$158,357)
Office Services	\$155,997	\$3,400	\$152,597	\$91,074	(\$20,036)
Community Services	\$245,495	\$42,300	\$203,195	\$121,273	(\$49,128)
District Attorney	\$223,326	\$42,387	\$180,939	\$107,990	(\$43,196)
Justice Peace #1	\$68,942	\$54,000	\$14,942	\$8,918	(\$3,613)
Justice Peace #3	\$44,188	\$9,000	\$35,188	\$21,001	(\$35,188)
Airports	\$7,450	\$0	\$7,450	\$4,446	\$0
Courthouse	\$158,900	\$8,870	\$150,030	\$89,542	(\$22,386)
Employee Benefits	\$57,880	\$30,730	\$27,150	\$16,204	(\$12,153)
South Coast Offices	\$30,070	\$0	\$30,070	\$17,947	(\$30,070)
North County Offices	\$26,520	\$0	\$26,520	\$15,828	(\$26,520)
Lily Bulb	\$5,500	\$0	\$5,500	\$3,283	(\$5,500)
Contributions	\$5,000	\$0	\$5,000	\$2,984	(\$1,209)
Other Agency Grants	\$156,436	\$156,436	\$0	\$0	\$0
Sheriff-Civil	\$936,346	\$38,401	\$897,945	\$535,921	(\$294,756)
Sheriff-Marijuana	\$55,477	\$54,000	\$1,477	\$882	\$0
Sheriff-Marine	\$48,781	\$29,697	\$19,084	\$11,390	(\$4,614)
Sheriff-Search & Rescue	\$3,820	\$0	\$3,820	\$2,280	(\$924)
Sheriff-Dog	\$4,475	\$0	\$4,475	\$2,671	(\$1,082)
Sheriff-Forest	\$31,535	\$31,053	\$482	\$288	\$0

CURRY COUNTY (Continued)

DEPARTMENT	Expenditures	Revenues	General Fund Transfer	Supporting Share of O & C Revenues	Estimated Impact of a
					50 Percent Reduction in O & C Revenue
Animal Control	\$82,686	\$0	\$82,686	\$49,349	(\$82,686)
Predatory Animals	\$30,000	\$0	\$30,000	\$17,905	(\$30,000)
Emergency Services	\$7,432	\$0	\$7,432	\$4,436	(\$1,797)
North/Central CC	\$34,320	\$34,320	\$0	\$0	\$0
Weed Control	\$48,052	\$22,000	\$26,052	\$15,549	(\$26,052)
Public Services	\$509,079	\$379,953	\$129,126	\$77,066	(\$38,533)
Solid Waste	\$170,750	\$75,048	\$95,702	\$57,118	(\$51,406)
P/H WIC Subcontract	\$28,992	\$24,106	\$4,886	\$2,916	(\$1,181)
Public Health Office	\$107,950	\$40,193	\$67,757	\$40,439	(\$16,382)
P/H Maternal	\$171,844	\$123,796	\$48,048	\$28,676	(\$11,617)
P/H Medical	\$6,410	\$860	\$5,550	\$3,312	(\$1,342)
Home Health	\$0	\$0	\$0	\$0	\$0
P/H Family Planning	\$79,404	\$39,372	\$40,032	\$23,892	(\$23,892)
P/H Multi-Modular	\$5,470	\$0	\$5,470	\$3,265	(\$5,470)
Human Services A & D	\$137,258	\$85,764	\$51,494	\$30,733	(\$29,197)
Council Alcoholism	\$17,478	\$30,432	(\$12,954)	\$0	\$0
H.S. Local Administration	\$31,348	\$28,130	\$3,218	\$1,921	\$0
H.S. M & ED	\$247,959	\$209,014	\$38,945	\$23,244	(\$15,108)
H.S. DD Case Management	\$46,124	\$36,971	\$9,153	\$5,463	(\$2,458)
H.S. Sub-Contracts	\$737,453	\$737,453	\$0	\$0	\$0
Indigent Fund	\$3,500	\$0	\$3,500	\$2,089	(\$846)
Family Commodities	\$2,200	\$0	\$2,200	\$1,313	(\$532)
County Jail	\$416,814	\$10,200	\$406,614	\$242,679	(\$121,340)
Juvenile Department	\$248,817	\$20,075	\$228,742	\$136,520	(\$55,305)
Juvenile Dept. Admin.	\$0	\$0	\$0	\$0	\$0
Juvenile Shelter	\$18,216	\$17,366	\$850	\$507	(\$206)
Juvenile A & D Education	\$9,823	\$0	\$9,823	\$5,863	(\$2,375)
RSVP	\$39,635	\$30,925	\$8,710	\$5,198	(\$2,106)
Communications	\$201,507	\$0	\$201,507	\$120,265	(\$36,080)
Parks & Recreation	\$136,740	\$4,000	\$132,740	\$79,223	(\$102,990)
General Services	\$315,956	\$5,300	\$310,656	\$185,409	(\$111,245)
OTHER REQUIREMENTS*	\$1,129,033	\$0	\$1,129,033	\$673,841	(\$154,983)
County Fair	\$330,179	\$330,179	\$179,604	\$107,193	(\$107,193)
Law Library	\$13,432	\$13,432	\$2,432	\$1,451	(\$726)
Home Health	\$293,697	\$293,697	\$59,197	\$35,331	(\$22,965)
TOTAL	\$9,343,144	\$2,867,786	\$6,475,358	\$3,880,000	(\$1,940,000)

*Includes operating contingency and unappropriated balance

Table E-4b. Curry County, Other Funds

OTHER FUNDS	Rev/Expend	"Other Requirements" Transfer	Supporting Share of O & C Revenues	Estimated Impact of a 50% Reduction in O & C Revenues
General Road Fund	\$8,788,813	\$0	\$0	\$0
Hospital Operating Fund	\$525	\$0	\$0	\$0
Computer Intragovmtl Service	\$825,066	\$0	\$0	\$0
Home Health Fund	\$293,697	\$59,197	\$23,984	(\$22,965)
Liquor Enforcement	\$3,250	\$0	\$0	\$0
Dog License Fund	\$5,470	\$0	\$0	\$0
County Fair Fund	\$330,179	\$179,604	\$72,767	(\$107,193)
911 Phone Fund	\$117,950	\$0	\$0	\$0
Law Library Fund	\$13,432	\$2,432	\$985	(\$726)
Gen. Fund Equipment Self-Insurance	\$63,400	\$0	\$0	\$0
County School Fund	\$2,331,173	\$30,000	\$12,155	\$0
Public Works	\$22,050	\$0	\$0	\$0
Road Equipmt. Self-Insurance	\$3,503,600	\$0	\$0	\$0
Capital Improvement Road Reserve	\$5,400,000	\$0	\$0	\$0
Reserve Fund Schools	\$2,110,000	\$0	\$0	\$0
Reserve Funds Cities	\$2,110,000	\$0	\$0	\$0
Total:	\$25,918,605	\$271,233	\$109,890	(\$130,884)
FOREST SERVICE REVENUES			Forest Service Revenues	50% Reduction
General Road Fund			\$4,700,000	(\$2,350,000)
County School Funds			\$881,250	(\$440,625)
Total Revenue Reduction				(\$4,730,625)

Table E-5a. Douglas County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Douglas County

Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest reductions on federal lands in O & C counties. (Based on Douglas County 1989-1990 budget)

Total County Revenues	\$75,835,528
Total General Fund Revenues	\$37,251,951
O & C Revenues	\$27,532,729
O & C Operating Transfers Out	\$19,247,578
O & C Remaining	\$8,285,151
General Fund Revenue after Transfers Out	\$18,026,292
General Fund Expenditures	\$23,666,234
O & C as % of Expenditures	35.01 %
National Forest Receipts	\$22,829,681
Federal Timber Revenues as % of Total Budget	66.41 %

GENERAL FUND		Supporting	Estimated Impact of a
Department	Expenditures	Share of O & C Revenue*	50 Percent Reduction in O & C Revenues
Board of Commissioners	\$283,548	\$99,265	(\$24,816)
Nondepartmental	\$2,108,178	\$738,038	(\$479,609)
Management and Finance	\$485,592	\$169,998	(\$42,499)
County Counsel	\$182,074	\$63,741	(\$15,935)
Communications and Electronics	\$1,060,353	\$371,212	(\$92,803)
Juvenile Services	\$199,206	\$69,739	\$0
Tax Collectors	\$266,118	\$93,163	(\$23,291)
Building Department	\$350,327	\$122,644	(\$30,661)
Parole and Probation	\$283,179	\$99,136	\$0
Parks Department	\$1,114,313	\$390,102	(\$390,102)
Land Department	\$171,916	\$60,185	(\$39,111)
Library	\$1,607,200	\$562,654	(\$562,654)
Data Processing	\$1,412,873	\$494,623	(\$123,656)
Planning	\$772,502	\$270,440	(\$67,610)
Building facilities	\$1,415,251	\$495,456	(\$321,969)
Veterans Services	\$63,743	\$22,315	(\$14,501)
Watermaster	\$39,096	\$13,687	(\$8,894)
Personnel	\$237,606	\$83,182	(\$20,795)
Community Services	\$197,533	\$69,153	(\$44,939)
Agri-Forest Demos	\$27,796	\$9,731	(\$9,731)
Museum	\$290,044	\$101,540	(\$101,540)
Solid Waste Operations	\$1,331,577	\$466,163	\$0
County Clerk	\$549,490	\$192,367	(\$48,092)
County Assessor	\$1,192,348	\$417,421	(\$104,355)
County Treasurer	\$99,633	\$34,880	(\$8,720)
Sheriff	\$5,658,377	\$1,980,903	(\$1,287,278)
Surveyor	\$344,215	\$120,504	(\$120,504)
District Attorney	\$847,238	\$296,604	(\$74,151)
Juvenile	\$417,013	\$145,989	(\$72,995)
Pitchford Boys Ranch	\$333,288	\$116,679	\$0
Justice of the Peace			
Glendale	\$79,125	\$27,700	(\$2,770)
Drain	\$67,185	\$23,520	(\$2,352)
Reedsport	\$87,573	\$30,658	(\$3,066)
Canyonville	\$90,724	\$31,761	(\$3,176)
Contingency Account	\$0	\$0	\$0
Total Expenditures:	\$23,666,234	\$8,285,151	(\$4,142,575)

*Rough estimates

Table E-5b. Douglas County, Other Funds

Operating Transfers out of Gen. Fund = \$19,247,578

OTHER FUNDS	Expenditures	Revenues	Estimated Impact of a	
			Supporting Share of O & C Revenues	50 Percent Reduction in O & C Revenues
Public Works	\$12,307,796	\$23,686,974	\$0	\$0
Dog Control	\$424,905	\$111,194	\$343,681	(\$172,000)
Law Library	\$89,659	\$93,245	\$0	\$0
Liquor Law Enforcement*	\$0	\$13,945	\$0	\$0
Health & Social Services	\$7,681,240	\$5,866,717	\$1,859,152	(\$930,000)
County Forest Management	\$115,723	\$587,241	\$0	\$0
County Fair	\$1,028,623	\$637,481	\$296,022	(\$148,000)
Footpath and Bicycle Trail	\$0	\$54,277	\$0	\$0
Industrial Development	\$449,914	\$266,244	\$0	\$0
Salmon Habitat Improvement	\$31,716	\$3,551	\$19,480	(\$28,165)
County Schools	\$7,649,535	\$6,234,017	\$1,386,006	(\$693,000)
Water Development***	\$722,547	\$684,449	\$0	\$0
Drug Abuse Prevention	\$208,577	\$344,242	\$1,900,000	(\$1,900,000)
Subtotal:	\$30,710,235	\$38,583,577	\$5,804,341	(\$3,871,165)
Capital Projects**	\$2,032,662	\$369,760	\$5,218,500	(\$2,600,000)
Financial Reserve	\$0	\$844,410	\$8,219,737	(\$3,150,124)
Internal Service	\$2,399,858	\$2,529,551	\$5,000	(\$2,500)
Total:	\$35,142,755	\$42,327,298	\$19,247,578	(\$9,623,789)
FOREST SERVICE REVENUES			Forest Service Revenues	50.00 % Reduction
Public Works Fund			\$17,122,261	(\$8,561,131)
County Schools			\$5,707,420	(\$2,853,710)
TOTAL REVENUE REDUCTION				(\$25,181,205)

Table E-6a. Jackson County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Jackson County

Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest reductions on federal lands in O & C counties. (Based on Jackson County 1990-1991 budget)

Total County Expenditures	\$83,856,148
Total General Fund	\$35,116,389
Total General Fund Revenues = Fiduciary + Treasurer - Commissioner's Property Taxes = ($\$29,346,607 + \$825,000 - \$288,018$)	\$29,883,589
O & C Revenues	\$15,671,800
O & C Revenues + Interest (\$601,000) =	\$16,272,800
O & C as % of General Fund Revenues:	54.45 %
National Forest Receipts	\$5,432,609
Federal Timber Revenue as % of Total Budget	25.88 %

GENERAL FUND Department	Expenditures	Revenues	General Fund Support	Supporting Share of O & C Revenues	Estimated Impact of a	
					10 Percent Reduction in O & C Revenue	50 Percent Reduction in O & C Revenue
Commissioners	\$327,518	\$39,500	\$288,018	\$0	\$0	\$0
Management Info. Svcs.	\$1,369,727	\$662,182	\$707,545	\$385,286	(\$26,581)	(\$193,109)
Assessor	\$1,845,925	\$15,170	\$1,830,755	\$996,918	\$0	(\$499,665)
Finance	\$723,561	\$225,185	\$498,376	\$271,385	(\$18,723)	(\$136,021)
County Counsel	\$219,787	\$69,226	\$150,561	\$81,986	\$0	(\$41,092)
Administration	\$2,953,582	\$510,767	\$2,442,815	\$1,330,209	(\$91,772)	(\$666,714)
Fiduciary	\$12,497,385	\$29,346,607	(\$16,849,222)	\$6,805,320	(\$1,293,011)	(\$3,410,894)
County Clerk	\$580,182	\$490,058	\$90,124	\$49,076	(\$3,386)	(\$4,908)
District Attorney	\$1,168,938	\$340,398	\$828,540	\$451,173	\$0	(\$226,132)
Corrective Services	\$1,038,486	\$666,003	\$372,483	\$202,832	(\$13,993)	(\$101,661)
Justice Court	\$54,568	\$36,100	\$18,468	\$10,057	(\$694)	(\$5,040)
Juvenile	\$1,166,002	\$105,702	\$1,060,300	\$577,375	(\$39,833)	(\$289,386)
Parks and Recreation	\$1,217,692	\$306,587	\$911,105	\$496,133	(\$89,304)	(\$248,667)
Planning	\$1,705,288	\$663,445	\$1,041,843	\$567,325	(\$39,140)	(\$284,349)
Sheriff	\$7,844,132	\$699,449	\$7,144,683	\$3,890,562	\$0	(\$1,949,989)
Surveyor	\$284,700	\$115,000	\$169,700	\$92,408	(\$6,375)	(\$46,316)
Treasurer	\$118,916	\$825,010	(\$706,094)	\$64,754	(\$4,467)	(\$32,456)
TOTAL	\$35,116,389	\$35,116,389	\$0	\$16,272,800	(\$1,627,280)	(\$8,136,400)

Table E-6b. Jackson County, Other Funds

OTHER FUNDS	FY 90/91 Expend/Rev	General Fund Transfer	Supporting Share of O & C Revenues	Estimated Impact of a	
				10 Percent Reduction in O & C Revenues	50 Percent Reduction in O & C Revenues
General Road Fund (Public Works)	\$17,783,059	\$0	\$0	\$0	\$0
Animal Control Fund (Parks & Rec.)	\$0	\$0	\$0	\$0	\$0
Library	\$2,679,370	\$0	\$0	\$0	\$0
County Schools (Treasurer)	\$1,841,114	\$0	\$0	\$0	\$0
Civic Auditorium (Cap. Projects)	\$201,330	\$0	\$0	\$0	\$0
Footpath & Bike Trail (Parks & Rec.)	\$169,578	\$0	\$0	\$0	\$0
Liquor Enforcement (D.A.)	\$4,500	\$0	\$0	\$0	\$0
Children's Fund (Administration)	\$224,000	\$0	\$0	\$0	\$0
911 Tax	\$190,000	\$0	\$0	\$0	\$0
Shady Cove Park (Parks & Rec.)	\$199,109	\$64,853	\$35,312	\$0	(\$64,853)
Health & Human Svcs.	\$10,788,152	\$1,881,756	\$1,024,616	\$0	(\$1,881,756)
Solid Waste Mgmt. Fund (Planning)	\$103,575	\$0	\$0	\$0	\$0
Airport Enterprise	\$4,722,989	\$0	\$0	\$0	\$0
Historical Operating	\$2,029,894	\$0	\$0	\$0	\$0
Law Library (Library)	\$316,015	\$0	\$0	\$0	\$0
Exposition Park	\$957,309	\$182,774	\$99,520	(\$182,774)	(\$182,774)
Recreation Enterprise (Parks & Rec)	\$1,633,070	\$115,017	\$62,627	(\$115,017)	(\$115,017)
Motorpool (Public Works)	\$1,078,240	\$0	\$0	\$0	\$0
Self-Insurance (Administration)	\$3,149,146	\$0	\$0	\$0	\$0
Record Services (Mgmt. Info Svcs)	\$363,040	\$0	\$0	\$0	\$0
Industrial Revenue Bonds	\$621,067	\$0	\$0	\$0	\$0
Capital Projects Fund	\$1,202,468	\$0	\$0	\$0	\$0
County-City Arterial (Cap. Projects)	\$566,274	\$0	\$0	\$0	\$0
Street Improvement (Cap. Projects)	\$113,360	\$0	\$0	\$0	\$0
Greenway (Parks & Rec)	\$151,943	\$104,443	\$56,869	(\$104,443)	(\$104,443)
Total:	\$51,088,602	\$2,348,843	\$1,278,945	(\$402,234)	(\$2,348,843)
FOREST SERVICE REVENUES			Forest Service Revenues	10% Reduction	50% Reduction
General Road Fund			\$3,882,721	(\$388,272)	(\$1,941,361)
County Schools			\$1,549,888	(\$154,989)	(\$774,944)
TOTAL REVENUE REDUCTION				(\$2,170,541)	(\$10,852,705)

Table E-7a. Josephine County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Josephine County

Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest reductions on federal lands in O & C counties. (Based on Josephine County 1990-1991 budget)

Total County Revenues and Expenditures		\$40,694,270				
Total General Fund		\$24,028,963				
O & C Revenues		\$12,500,000				
O & C as % of Revenue		52.02%				
National Forest Receipts		\$1,960,704				
Federal Timber Revenues as % of Total Budget		35.53%				

GENERAL FUND Department					Estimated Impact of a	
					10 Percent Reduction in O & C Revenue	50 Percent Reduction in O & C Revenue
Expenditures	Revenues	Fund Transfer	Supporting Share of O & C Revenues			
County Assessor	\$982,881	\$271,000	\$711,881	\$530,570	\$0	(\$226,087)
County Clerk	\$499,497	\$216,300	\$283,197	\$211,069	(\$26,987)	(\$89,941)
County Treasurer	\$296,872	\$0	\$296,872	\$221,261	(\$11,063)	(\$94,284)
County Surveyor	\$61,147	\$10,250	\$50,897	\$37,934	(\$4,850)	(\$16,161)
District Attorney	\$901,672	\$139,650	\$762,022	\$567,940	(\$72,617)	(\$242,012)
Finance	\$3,250,678	\$16,681,643	(\$13,430,965)	\$2,422,753	(\$309,772)	(\$1,032,387)
Building & Safety	\$290,749	\$315,000	(\$24,251)	\$0	\$0	(\$72,687)
Parks & Airports	\$1,055,601	\$465,800	\$589,801	\$439,583	(\$87,917)	(\$439,583)
Forestry	\$443,225	\$508,943	(\$65,718)	\$0	\$0	\$0
Public Health Services	\$1,117,840	\$454,870	\$662,970	\$494,116	(\$63,177)	(\$210,553)
Enviro. Health Svcs.	\$709,407	\$258,449	\$450,958	\$336,102	(\$42,974)	(\$143,220)
Juvenile Services	\$892,059	\$187,291	\$704,768	\$525,269	(\$67,161)	(\$223,828)
Mental Health Svcs.	\$3,611,799	\$2,751,130	\$860,669	\$641,463	(\$82,017)	(\$273,341)
Probation Services	\$1,120,785	\$302,610	\$818,175	\$609,792	(\$77,968)	(\$259,845)
Library Services	\$997,776	\$34,600	\$963,176	\$717,862	(\$91,785)	(\$717,862)
County Sheriff	\$5,439,559	\$357,805	\$5,081,754	\$3,787,467	(\$189,373)	(\$1,613,921)
RSVP	\$117,553	\$73,639	\$43,914	\$32,729	(\$4,185)	(\$32,729)
Emergency Svcs Director	\$62,609	\$0	\$62,609	\$46,663	(\$5,966)	(\$19,884)
Planning	\$456,833	\$63,500	\$393,333	\$293,154	(\$37,483)	(\$219,865)
Community & Vet Svcs	\$1,365,986	\$936,483	\$429,503	\$320,112	(\$40,929)	(\$136,406)
Watermaster	\$184,149	\$0	\$184,149	\$137,248	(\$17,548)	(\$58,484)
Cooperative Extension	\$170,286	\$0	\$170,286	\$126,915	(\$16,227)	(\$126,915)
General Fund Total:	\$24,028,963	\$24,028,963	\$0	\$12,500,000	(\$1,250,000)	(\$6,250,000)

Table E-7b. Josephine County, Other Funds

(O & C support came from the Finance Department or was for General Fund support services)

OTHER FUNDS	Expenditures	Revenues	General Fund Support	Supporting Share of O & C Revenues	Estimated Impact of a	
					10 Percent Reduction in O & C Revenue	50 Percent Reduction in O & C Revenue
Public Works Operating Fund	\$8,590,239	\$8,590,239	\$133,700	\$98,938	(\$9,894)	(\$49,094)
County Fair Fund	\$631,614	\$631,614	\$205,312	\$151,931	(\$15,193)	(\$151,931)
Sheriff's Reserve Fund	\$17,000	\$17,000	\$12,000	\$8,880	(\$888)	(\$8,880)
City/County Recreational Program	\$178,284	\$178,284	\$39,142	\$28,965	(\$2,897)	(\$28,965)
Law Library Fund	\$83,942	\$83,942	\$22,042	\$16,311	(\$1,631)	(\$8,094)
Redwood Sewer Compost Fund	\$468,844	\$468,844	\$110,619	\$81,858	(\$8,186)	(\$40,619)
Internal Service Fund						
County Treasurer	\$83,729	\$0	\$0	\$0	\$0	\$0
Board of County Commissioners	\$493,860	\$10,250	\$10,000	\$7,400	(\$740)	(\$3,672)
Director of Finance	\$478,601	\$3,114,100	\$2,910,882	\$2,154,053	(\$215,405)	(\$1,068,859)
Data Processing Manager	\$482,656	\$23,500	\$0	\$0	\$0	\$0
Director of General Services	\$1,884,819	\$514,262	\$422,300	\$312,502	(\$31,250)	(\$155,066)
Director of Human Resources	\$114,975	\$0	\$0	\$0	\$0	\$0
County Legal Counsel	\$123,472	\$0	\$0	\$0	\$0	\$0
Director of Internal Services	\$0	\$0	\$0	\$0	\$0	\$0
Total:	\$3,662,112	\$3,662,112	\$3,343,182	\$2,473,955	(\$247,395)	(\$1,227,597)
Vehicle Maint., Rental and Revolving Fund	\$761,922	\$761,922	\$611,872	\$452,785	(\$45,279)	(\$224,676)
Self Insurance Fund	\$1,327,250	\$1,327,250	\$1,026,750	\$759,795	(\$75,980)	(\$377,017)
Illinois Valley Airport Fund	\$115,123	\$115,123	\$40,000	\$29,600	(\$2,960)	(\$29,600)
North Valley Industrial Park Assessment Fu	\$165,000	\$165,000	\$139,400	\$103,156	(\$10,316)	\$0
Energy Improvements Debt Service Fund	\$17,800	\$17,800	\$15,800	\$11,692	(\$1,169)	\$0
County School Trust Fund	\$646,177	\$646,177	\$101,456	\$75,077	(\$7,508)	\$0
SPECIAL FUNDS TOTAL	\$16,665,307	\$16,665,307	\$5,801,275	\$4,292,944	(\$429,294)	(\$2,146,472)
FOREST SERVICE REVENUES				Forest Service Revenues	10% Reduction	50% Reductions
Public Works Operating Fund				(\$1,421,370)	(\$142,137)	(\$710,685)
County School Trust Fund				(\$539,424)	(\$53,942)	(\$269,712)
TOTAL REVENUE REDUCTION					(\$1,446,079)	(\$7,230,397)

Table E-8a. Klamath County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Klamath County

Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest reductions on federal lands in O & C counties. (Based on Klamath County 1990-1991 budget)

Total County Revenues and Expenditures	\$79,574,467
Total General Fund	\$12,881,277
O & C Revenues	\$2,340,000
O & C as % of General Operations Revenues	25.47%
O & C in General Operations Expenditures	\$558,177
Remaining O & C	\$1,781,823
Remaining O & C as % of Revenue	24.81%
National Forest Receipts	\$14,865,870
Federal Timber Revenues as % of Total Budget	21.62%

				Estimated Impact of a		
GENERAL FUND				Supporting	10 Percent	50 Percent
Department	Expenditures	Revenues	General Fund Support	Share of O & C Revenue	Reduction in O & C Revenue	Reduction in O & C Revenue
Treasurer/Tax*	\$319,949	\$202,071	\$117,878	\$29,246	\$0	\$0
Assessor	\$835,741	\$184,025	\$651,716	\$161,695	\$0	\$0
Tourism	\$107,580	\$73,800	\$33,780	\$8,381	(\$33,780)	(\$33,780)
Commissioners*	\$288,345	\$219,605	\$68,740	\$17,055	\$0	\$0
Clerk	\$336,117	\$171,143	\$164,974	\$40,931	\$0	(\$30,698)
Planning	\$249,097	\$34,200	\$214,897	\$53,317	\$0	\$0
Traffic Safety	\$1,913	\$1,913	\$0	\$0	\$0	\$0
Justice Court	\$122,508	\$145,000	(\$22,492)	\$0	\$0	\$0
District Attorney	\$613,091	\$126,900	\$486,191	\$120,627	\$0	(\$50,414)
Sheriff	\$4,198,768	\$1,209,933	\$2,988,835	\$741,548	(\$85,278)	(\$309,918)
Juvenile Dept.	\$764,032	\$155,359	\$608,673	\$151,015	(\$15,011)	(\$182,602)
Building	\$337,525	\$500,000	(\$162,475)	\$0	\$0	\$0
Veteran's Service	\$86,843	\$12,740	\$74,103	\$18,385	\$0	(\$14,708)
Public Health	\$927,420	\$492,643	\$434,777	\$107,871	(\$10,722)	(\$45,083)
Parks	\$91,608	\$48,000	\$43,608	\$10,819	\$0	(\$43,608)
Museum	\$183,799	\$12,400	\$171,399	\$42,525	\$0	(\$102,839)
OSU Extension	\$142,489	\$0	\$142,489	\$35,352	(\$3,514)	(\$35,352)
Experimental Station	\$87,851	\$4,562	\$83,289	\$20,665	(\$2,054)	\$0
Watermaster	\$29,558	\$0	\$29,558	\$7,334	\$0	\$0
Library	\$744,883	\$96,940	\$647,943	\$160,759	(\$15,979)	(\$151,113)
Surveyor	\$7,222	\$1,500	\$5,722	\$1,420	(\$141)	\$0
Community Services	\$213,130	\$0	\$213,130	\$52,879	(\$5,256)	(\$22,100)
General Fund Sub:	\$10,689,469	\$3,692,734	\$6,996,735	\$1,781,823	(\$171,736)	(\$1,022,216)
General Operations	\$2,191,808	\$9,188,543	(\$6,996,735)	\$558,177	(\$62,264)	(\$147,784)
Total:	\$12,881,277	\$12,881,277	\$0	\$2,340,000	(\$234,000)	(\$1,170,000)

* These Departments also receive O & C revenues indirectly through Non Departmental transfers

Table E-8b. Klamath County, Other Funds

O & C Revenues (indirect) = (.1817 * Gen. Fund Transfer) + (.2481 * General Operations Transfer)

OTHER FUNDS	FY 90/91 Expend/Rev	General Fund Transfer	General Operations Transfer	Supporting Share of O & C Revenues	Estimated Impact of a	
					10 Percent Reduction in O & C Revenue	50 Percent Reduction in O & C Revenue
Youth Services Commission	\$217,874	\$0	\$0	\$0	\$0	\$0
Baldwin Hotel Mem. Fund	\$7,200	\$0	\$0	\$0	\$0	\$0
DA Enforcement Fund	\$17,500	\$0	\$0	\$0	\$0	\$0
Road Department	\$29,414,385	\$0	\$0	\$0	\$0	\$0
Bicycle Trail	\$75,000	\$0	\$0	\$0	\$0	\$0
Klamath County Revolving	\$167,784	\$0	\$0	\$0	\$0	\$0
Taylor Grazing	\$9,834	\$0	\$0	\$0	\$0	\$0
Bancroft Bond Fund	\$781,000	\$0	\$0	\$0	\$0	\$0
Klam. Co. Bond & Interest	\$25,000	\$0	\$0	\$0	\$0	\$0
Jail Bond & Interest*	\$1,994,859	\$0	\$0	\$0	\$0	\$0
Road Reserves	\$15,100,000	\$0	\$0	\$0	\$0	\$0
Automation Reserve	\$155,500	\$0	\$0	\$0	\$0	\$0
Landfill Site Reserve	\$23,484	\$0	\$0	\$0	\$0	\$0
Land Corner Restoration	\$47,000	\$0	\$0	\$0	\$0	\$0
Eqpmt. Rent & Revolving	\$712,176	\$144,220	\$23,748	\$32,097	(\$3,210)	(\$16,048)
Space Rent & Revolving	\$1,092,147	\$614,761	\$67,834	\$128,532	\$0	\$0
Jail Constr. Reserve	\$300,000	\$0	\$0	\$0	\$0	\$0
Convalescent Center	\$276,257	\$0	\$0	\$0	\$0	\$0
Recycling	\$42,000	\$0	\$0	\$0	\$0	\$0
Weed & Rodent	\$193,221	\$30,121	\$0	\$5,473	(\$547)	(\$30,121)
Juvenile Woodcutting	\$3,500	\$0	\$0	\$0	\$0	\$0
Exp. Sta. Field Rach. Prog.	\$61,950	\$0	\$0	\$0	\$0	\$0
Property Sales Fund	\$160,876	\$0	\$0	\$0	\$0	\$0
Museum Sales/Donation	\$28,800	\$0	\$0	\$0	\$0	\$0
Economic Development	\$353,472	\$0	\$15,000	\$3,722	\$0	(\$1,861)
Community Corrections	\$204,106	\$0	\$0	\$0	\$0	\$0
Central Stores	\$249,313	\$0	\$23,746	\$5,891	\$0	\$0
Risk Management	\$2,931,109	\$0	\$0	\$0	\$0	\$0
County Schools Rev.	\$5,433,983	\$0	\$146,770	\$36,414	\$0	\$0
Dog Control	\$112,393	\$0	\$40,592	\$10,071	(\$1,007)	(\$40,592)
Mental Health	\$3,102,640	\$0	\$57,500	\$14,266	(\$57,500)	(\$57,500)
Fairgrounds	\$611,993	\$0	\$0	\$0	\$0	\$0
Law Library	\$87,736	\$0	\$13,396	\$3,324	\$0	(\$1,662)
Solid Waste Fund	\$659,601	\$0	\$0	\$0	\$0	\$0
Special Funds Total:	\$64,653,693	\$1,177,688	\$388,586	\$239,788	(\$62,264)	(\$147,784)
FOREST SERVICE REVENUES				Forest Service Revenues	10% Reduction	50% Reduction
Road Department				\$10,500,000	(\$1,050,000)	(\$5,250,000)
County Schools				\$4,365,870	(\$436,587)	(\$2,182,935)
TOTAL REVENUE REDUCTION					(\$1,720,587)	(\$8,602,935)

Table E-9. Lane County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Lane County

Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest reductions on federal lands in O & C counties. (Estimates based on Lane County 1990-1991 budget)

Total County Budget		\$225,000,000		
Discretionary General Fund Allocation and Revenues		\$37,783,102		
O&C Revenue, Budgeted		\$16,000,000		
O&C Revenue Proportion of Disc. GF Revenues		42.3 %		
Forest Service Revenue		\$32,000,000		
Federal Timber Revenues as % of Total Budget		21.3 %		
DISCRETIONARY GENERAL FUND				
Departments	Discretionary Expenditures	Supporting Share of O & C Revenues	Estimated impact of a 10 Percent Reduction in O & C Revenues	50.0 % Reduction in O & C Revenues
REQUIRED DIRECT PAYMENTS				
School Support	\$639,200	\$270,682	\$0	\$0
LAW ENFORCEMENT/CRIMINAL JUSTICE				
Public Safety	\$10,804,927	\$4,575,560	(\$228,778)	(\$1,830,224)
District Attorney	\$2,651,921	\$1,123,008	(\$56,150)	(\$449,203)
Youth Services	\$3,009,055	\$1,274,244	(\$63,712)	(\$509,697)
GENERAL GOVERNMENT				
Board of Commissioners	\$533,779	\$226,039	\$0	(\$22,604)
County Administration	\$1,484,023	\$628,439	(\$62,844)	(\$314,219)
Finance and Management	\$2,389,863	\$1,012,035	(\$101,203)	(\$506,017)
County Counsel	\$384,844	\$162,970	(\$16,297)	(\$40,742)
PUBLIC SERVICE DEPARTMENTS				
Assessment and Taxation	\$4,357,221	\$1,845,151	(\$36,903)	(\$738,060)
Health & Human Services	\$1,768,362	\$748,848	(\$74,885)	(\$374,424)
Public Works	\$1,382,642	\$585,507	(\$58,551)	(\$292,754)
OTHER EXPENSES				
Joint Social Services Fund	\$135,308	\$57,299	(\$5,730)	(\$28,649)
General Expense	\$650,000	\$275,255	(\$27,526)	(\$137,628)
Intergovernmental Payments	\$310,000	\$131,276	(\$13,128)	(\$65,638)
Animal Regulation	\$283,957	\$120,247	(\$12,025)	(\$60,124)
Capital Projects	\$108,000	\$45,735	(\$45,735)	(\$45,735)
Capital Outlay	\$50,000	\$21,173	(\$21,173)	(\$21,173)
Transfer to Building Fund	\$200,000	\$84,694	(\$84,694)	(\$84,694)
Transfer to Levy Fund	\$225,000	\$95,281	(\$95,281)	(\$95,281)
RESERVES				
Appropriated Reserve	\$500,000	\$211,735	(\$21,173)	(\$105,867)
HVAC Project Commitment	\$2,000,000	\$846,939	\$0	\$0
Reserve for Future Years	\$3,915,000	\$1,657,884	(\$754,557)	(\$3,160,848)
TOTAL	\$37,783,102	\$16,000,000	(\$1,600,000)	(\$8,000,000)
National Forest Revenues				
	Expenditures	National Forest Revenues	10.0 % Reduction	50.0 % Reduction
Road Fund	\$78,039,839	\$24,000,000	(\$2,400,000)	(\$12,000,000)
School Fund	\$9,054,200	\$8,000,000	(\$800,000)	(\$4,000,000)
Total Federal Revenue		\$48,000,000	(\$4,800,000)	(\$24,000,000)

Table E-10. Linn County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Linn County
 Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest
 reductions on federal lands in O & C counties. (Based on Linn County 1990-1991 budget)

Total County Revenues and Expenditures	\$56,312,890
Total General Fund Revenues	\$11,845,732
O & C Revenues	\$2,769,441
O & C as % of General Fund	23.38%
National Forest Receipts	\$11,497,450
Federal Timber Revenues as % of Total Budget	25.34%

DEPARTMENT	Expenditures	Revenues	General Fund Transfer	Supporting Share of O & C Revenues	Estimated Impact	
					of a 10% Reduction in O & C Revenues	of a 50% Reduction in O & C Revenues
Commissioners	\$222,965	\$0	\$222,965	\$72,276	(\$8,018)	(\$29,374)
Assessment & Taxation	\$1,270,097	\$453,692	\$816,405	\$264,646	\$0	(\$107,556)
Clerk	\$481,669	\$276,875	\$204,794	\$66,386	(\$7,365)	(\$26,980)
Treasurer	\$116,351	\$0	\$116,351	\$37,716	(\$4,184)	(\$15,328)
Surveyor	\$204,241	\$49,000	\$155,241	\$50,323	(\$5,583)	(\$20,452)
Veteran's Services	\$42,605	\$12,500	\$30,105	\$9,759	(\$1,083)	(\$9,759)
Planning	\$516,007	\$292,436	\$223,571	\$72,473	(\$8,040)	(\$29,454)
Parks	\$563,498	\$198,780	\$364,718	\$118,227	(\$13,116)	(\$118,227)
Historical	\$35,101	\$20,514	\$14,587	\$4,729	(\$525)	(\$4,729)
Health Administration	\$140,294	\$133,294	\$7,000	\$2,269	(\$252)	(\$922)
MHS A & D Satellite	\$116,580	\$20,000	\$96,580	\$31,307	(\$3,473)	(\$12,724)
Public Health	\$679,216	\$295,586	\$383,630	\$124,358	(\$13,796)	(\$124,358)
Environmental Health	\$233,214	\$113,301	\$119,913	\$38,871	(\$4,312)	(\$15,798)
Sheriff-Civil	\$202,597	\$61,640	\$140,957	\$45,693	(\$5,069)	(\$18,570)
Sheriff-Criminal	\$2,534,857	\$788,097	\$1,746,760	\$566,230	(\$62,817)	(\$226,492)
Sheriff-Jail Facility	\$34,049	\$8,000	\$26,049	\$8,444	\$0	(\$3,432)
Justice of Peace, Lebanon	\$85,199	\$125,000	\$0	\$0	\$0	\$0
Central Linn Justice	\$63,629	\$70,000	\$0	\$0	\$0	\$0
District Attorney	\$675,352	\$126,890	\$548,462	\$177,789	(\$19,724)	(\$71,116)
Medical Examiner	\$28,115	\$3,600	\$24,515	\$7,947	(\$882)	(\$3,230)
Juvenile	\$300,068	\$22,553	\$277,515	\$89,959	(\$9,980)	(\$35,984)
General Administration	\$615,408	\$1,000	\$614,408	\$199,167	(\$22,095)	(\$80,944)
Data Processing	\$378,911	\$47,020	\$331,891	\$107,586	(\$11,936)	(\$11,936)
General Services	\$1,163,052	\$206,312	\$956,740	\$310,137	(\$34,406)	(\$126,044)
Printing	\$96,150	\$6,500	\$89,650	\$29,061	(\$3,224)	(\$11,811)
County Counsel	\$182,262	\$15,878	\$166,384	\$53,935	(\$5,984)	(\$21,920)
SUBTOTAL	\$10,981,487	\$3,348,468	\$7,679,191	\$2,489,287	(\$245,864)	(\$1,127,136)
Non-Departmental	\$601,912	\$8,497,264	\$0	\$195,116	(\$21,646)	(\$79,298)
Special Funds Revenues 1/	\$262,333	\$0	\$262,333	\$85,038	(\$9,434)	(\$178,287)
Non-Departmental Total	\$864,245	\$8,497,264	\$0	\$280,154	(\$31,080)	(\$257,585)
TOTAL	\$11,845,732	\$11,845,732	\$7,679,191	\$2,769,441	(\$276,944)	(\$1,384,721)

1/ calculated from Linn county other funds table

Table E-11a. Polk County

Estimated Revenue Impacts of a 10% and 50% Reduction in Federal Revenues to Polk County
 Estimates are developed solely for the purpose of evaluating social impacts of alternative timber harvest
 reductions on federal lands in O & C counties. (Estimates based on Polk County 1990-1991 budget)

Total 1990-91 Budget	\$20,778,567
Gen. Fund Total Resources	\$7,522,860
O&C Revenue to Gen. Fund	\$2,160,000
O&C proportion of Total General Fund	28.7%
National Forest Revenue	
Public Works, Roads	\$6,000
Federal Timber Revenue as % of Total Budget	10.4%

General Fund	FY 1990-91		Estimated Impact		New Revenue Offsets 50% Reduction
	Adopted Budget Expenditures	Supporting Share of O&C Revenues	of a 10% Reduction in O & C Revenues	of a 50% Reduction in O & C Revenues	
ASSESSORS	\$763,135	\$219,115	(\$7,000)	(\$15,115)	
COMMISSIONERS	\$216,684	\$62,215	\$0	(\$2,304)	
COMMUNITY DVLP.			(\$7,000)	(\$7,000)	
Building Insp.	\$95,300	\$27,363	\$0	(\$1,013)	
Environmental Health	\$123,471	\$35,452	\$0	(\$1,313)	
Planning	\$206,747	\$59,362	\$0	(\$2,199)	
COUNTY CLERK					
Recording	\$147,339	\$42,305	\$0	(\$1,567)	
Elections	\$118,042	\$33,893	\$0	(\$1,255)	
DISTRICT ATTORNEY					
Prosecution	\$340,966	\$97,900	\$0	(\$3,626)	
Support Enforcement	\$83,489	\$23,972	\$0	(\$888)	
Victim Assistance	\$21,000	\$6,030	\$0	(\$223)	
SHERIFF					
Emergency Mgmt	\$58,491	\$16,794	\$0	(\$622)	
Jail	\$878,712	\$252,300	\$0	(\$9,344)	
Criminal	\$1,055,630	\$303,098	(\$26,000)	(\$37,226)	
TAX COLLECTOR	\$147,973	\$42,487	\$0	(\$1,574)	
TREASURER	\$49,285	\$14,151	\$0	(\$524)	
NON-DEPARTMENTAL	\$854,690	\$245,403	\$0	(\$309,089)	
TRANSFERS	\$1,148,981	\$329,901	(\$176,000)	(\$352,219)	
FUND OPER. CONTIN.	\$712,925	\$204,698	\$0	(\$7,581)	
Unapp. Fund Balance	\$500,000	\$143,562	\$0	(\$5,317)	
TOTAL	\$7,522,860	\$2,160,000	(\$216,000)	(\$760,000)	
NEW REVENUE: Offsets any reductions in revenue					
Reduction in General Services insurance					\$115,000
Rent					\$205,000
TOTAL			(\$216,000)	(\$760,000)	\$320,000

Table E-11b. Polk County, Other Funds

OTHER FUNDS	FY 1990-91 Adopted Budget	Supporting Share of O&C Revenues	Estimated Impact		New Revenue Offsets. 50% Reduction
			of a 10% Reduction in O & C Revenues	of a 50% Reduction in O & C Revenues	
Public Works	\$2,850,430		(\$176,000)	(\$340,000)	
Road		\$157,919	\$0	(\$5,849)	
Dog Control	\$76,473	\$5,878	\$0	(\$218)	
Law Library	\$77,000	\$0	\$0	\$0	
Fair Library	\$222,500	\$7,752	\$0	(\$287)	
County School	\$800,000	\$26,441	\$0	(\$979)	
Building Improvement	\$313,500	\$22,970	\$0	(\$851)	
Insurance	\$947,375	\$0	\$0	\$0	
Community Corrections	\$0	\$0	\$0	\$0	
Public Rd. Improvement	\$95,000	\$0	\$0	\$0	
Public Health	\$478,684	\$27,564	\$0	(\$1,021)	
Mental Health	\$3,425,918	\$0	\$0	\$0	
Management Services	\$1,654,074	\$0	\$0	\$0	
Road Bond Construction	\$132,000	\$0	\$0	\$0	
Juvenile Dept.	\$340,157	\$80,763	\$0	(\$2,991)	
Juvenile Programs	\$647,085	\$0	\$0	\$0	
Public Land Corner Pres	\$92,000	\$0	\$0	\$0	
Debt Service	\$915,775	\$0	\$0	\$0	
Marine Patrol	\$37,736	\$613	\$0	(\$23)	
911 Emergency Comm	\$150,000	\$0	\$0	\$0	
TOTAL	\$20,778,567	\$329,901	(\$176,000)	(\$352,219)	\$0
Forest Service Revenue		Forest Service Revenue	10% Reduction	50% Reduction	New Revenue Offsets 50% Reduction
Public Works: Roads		\$6,000	(\$600)	(\$3,000)	\$0
Total revenue reduction			(\$216,600)	(\$763,000)	\$320,000

Appendix F

<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Benton	General estimate that approx. 50% of health needs of county poor are met by agency, though no current needs assessment exists for county. There has been a shift from spending county general funds on roads to compensate anticipated revenue cuts to maintain some social services. In early eighties mental health did fairly well, due to increased state funding. Never got back satellite clinics, also only now getting back "well baby" clinic. Expect an increase in depression, and other mental illnesses associated with economic stress.	Some co-ordination between community college and the Dept. of Labor, to provide basic adult education and retraining services to dislocated workers. Financial aid to workers would be in the form of Pell student loans. Benton-Linn Community College has experienced a general increase in enrollment during last two years. Competition for limited class space anticipated between dislocated workers/older students and younger students continuing education after high school and others unable to afford 4 years at college. Workers have been seeking to improve their educational backgrounds to aid in job search. Benton county is less dependent upon timber industry employment than some other counties, and as such is not anticipating a greater demand upon services by dislocated workers.	Sheriff's dept. did not lose any one during the downturn of the early eighties, and has been fiscally conservative during the last decade, following county commissioners' lead. The expected cut in O&C revenues will not have as great an impact as in other counties. Past experience (1979-83) showed no dramatic increase in property crime; gradual but not significant increase. Unemployment will result in an increase in domestic violence, sex and substance abuse cases.
<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Columbia	Health and Mental Health are provided by a private, non-profit group, contracted by the county. Presently receives 24,000 thousand dollars from county, a loss of any of that would kill their program, since most of their work is funded by fed. or state pass throughs. Education programs (substance abuse, sex ed.) are largely funded by grants, and depend upon the admin. support funded by the county. Migrant workers are a major concern but there are federal programs specific to their needs.	Portland Community College is involved in basic adult education, certificate programs and worker retraining. There has been a general increase in enrollment during the last few years.	Does not expect a significant increase in property crime, economic hard times does not turn someone into criminal. Alcohol and drug abuse are expected to increase, with an associated increase in domestic violence.
<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Coos	No measure of need in community. Local satellites clinics to be closed. Loss of preventative programs (sex, drug and alcohol education). Prenatal care program at risk (local private physicians have decided to guarantee prenatal care to all county residents - there is still expected to be an unmet need.)	Retraining and educational resources coordinated through South Coast Business Employment.	Alcohol and drug abuse expected to increase, also anticipate an associated increase in domestic violence. There will likely be some increase in property crime. Capital improvements will be delayed.

<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Curry	No real measure of need. Adjust fees to increase revenues. Curtail or cutback preventative programs (i.e. prenatal care). Sex education cutback. Provide emergency care.	Dislocated workers urged to apply for Pell grants. Retraining and educational resources coordinated through South Coast Business Employment. Rely upon adult education syst-em.	Anticipate increase in drug and alcohol abuse, domestic violence and DWI. Jail will suffer from over crowding. More "floaters" - homeless people wandering up and down the coast. Capital improvements will be delayed or cancelled. Continuing education and officer training programs will be cutback.
<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Douglas	Expecting an approx. 1/3 cut in budget. Response will be to not invest in capital, cut training and continuing ed. programs for staff, end home health visits. Review educ. programs funded by grants. Fear for those not qualified for other forms of state/fed. assistance. Director provided an experienced "guess" that health and mental services (5-6000 clients) are now meeting about 20-25% of the total need in Douglas County, which translates in to a need of 25-30,000 people in a county of (90,000).	Failure: Economic forum and job fair with chamber of commerce was recently canceled due to low interest. Short term training programs: truck driving, dental radiology, apprenticeship type programs in joint effort with employers (county), welding, food service, nanny program (students from Welfare Reform Act). General increase in enrollment experienced in last couple of years. More high school graduates are continuing on to college than in the past. Pell Grants used to finance retraining and education. General advice is that there is more opportunity outside of Douglas County. Health trades will become more important as more retirees move here.	Sheriff's dept. never recovered fully from earlier cuts in 80's. Proposed revenue reductions represent a cut of from 30-40 FTE's. Patrol capabilities would be severely restricted: resulting in delays in response time to property crimes. Expect an increase in property crime, priority would be given to crimes against people. Expect an increase in substance abuse and a related increase in domestic violence. Corrections loses visiting hours, after-hours activities. Continuing education and officer training programs will be curtailed.
<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Jackson	No current measure of community wide need - "greater than we are able to meet". Preventative programs most likely to be first effected. Emergency care will become the standard. Some adjustment of fees. Increased load will limit ability to provide care. Mental health section will be less able to provide drug and alcohol education to youth. Satellites clinics will be closed.	Dislocated workers urged to apply for Pell grants. Retraining and employment counseling through The Job Council. Community college seen as vital resource to workers. There has been an increase in enrollment during the last few years, with both men and women seeking to improve their employment skills, as many believe that it will be difficult to survive on the salary of one working adult. Present program is able to meet only about half of the demand of unemployed.	Expect that cutbacks will result in less patrol capabilities: resulting in an increased response time to reported property crimes. Will be more difficult to provide emergency services. Increase in alcohol and drug related crime, and domestic violence. Officer training programs will be severely affected. Capital improvements will be curtailed or canceled.

<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Josephine	County needs assessment completed in 1984, no more current measure of total need in community. Health and Human Services are dependent upon the outcome of the June levy vote by county residents. Unless levy passes approx. 18 FTE will be lost in Public Health. Preventative care will be lost. Expect to become the primary care provider for most of the unemployed and working poor. Coordinating services with other clinics and agencies to avoid duplication of services. Educational efforts will be first to be abandoned. Fee structure will be adjusted to increase revenues. Becoming coordinator of local resources for the unemployed: food and clothing drives organized, etc.	Rogue Community College providing basic adult education, trades certification, career counseling, etc. in co-operation with the Dept. of Labor and the Job Council. This cooperative effort, The Community Response Team (CRT), was begun about five years ago, and originally was concerned with broader issue of developing the county's economy. Presently, CRT has changed direction and is working to help newly displaced workers. Also, workers have been seeking to improve their educational background during the last several years - evidenced by increased enrollments. People were returning to school and holding full-time jobs. Educators see shift in economy from manufacturing base to service base: the area is becoming a recreation and retirement center. Employment future best for those in the health field.	Increase in response time to property crimes, with priority given to crimes against people. Response to emergencies also imperiled by staff cuts. Expect some increase in substance abuse problems. Also associated with an increase in alcohol abuse will be an increase in domestic violence. Prosecutor's office will experience greater difficulties in investigating crimes, delays in bringing suspects to trial, and may have an increase in plea bargaining. Jail is already experiencing problems of over-crowding. Revenues shortfalls will threaten drug prevention program. Continuing education and officer training programs will be curtailed, or canceled.
<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Klamath	No measure of unmet need. Mental health services relies upon grants from state, fed. and private agencies to run programs. Expect unemployment will increase incidence of mental illness (symptoms). Public health is anticipating a "rush" on services by those unable to obtain care in the private sector - will become primary care provider. Preventative programs will be cut, while emergency care programs will be maintained. Drug, alcohol, sex education and counseling will be curtailed if not ended.	Klamath Lakes Employment and Training Council is coordinator for retraining and educational opportunities. Presently unable to meet the need of more than half of unemployed. Relying upon federal dollars to continue programs. Individuals are assisted in applying for Pell grants and exploring educational opportunities. Oregon Institute of Technology is relied upon heavily to provide education for people in electronics - expect most retrained or educated people to leave town.	Department never fully recovered from the cutbacks of the early 1980's. Proposed cutbacks would result in loss of patrol officers, county would then need to rely more heavily upon State Patrol for response to emergencies. Anticipate delay in response time to all property crimes. Expect an increase in domestic violence and substance abuse - already this year have had an increase in murders associated with domestic violence. Higher rate of attempted suicides also anticipated.

<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Lane	No real measure of need in community. Some rationing of medical services likely to occur - through limits of staff and resources fewer people will be attended. The legal requirements of state will further limit what agency will be able to provide. Preventative care will be replaced by emergency care. Educational and counseling programs will be cutback, if not ended (i.e. drug, alcohol and sex education).	Private-Industry Council is the coordinator of retraining and educational programs. Workers are encouraged to apply for Pell grants to continue their education at community and state colleges. At present PIC is unable to meet the needs of approx. half of the eligible unemployed. Average age of workers is 43, not very confident about the ability of these people to learn new skills (many are illiterate.) Also expect a large portion of the single older men to become homeless.	Increase in drug and alcohol related crime anticipated. Property crimes also expected to increase (thefts, burglaries)
<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Linn	No measure available to translate increase in unemployment to increase in service load. Expect that there will be an increase in the "walking worried" - people who are suffering from the effects of depression, etc.; but these for the most part will not be eligible for Pub. Hlth. services. But most needs (health, food and clothing) will be handled by the state dept. of Adult and Family Services (welfare). Some adjustment of clinic fees will be made (though no one will be denied care due to inability to pay.) Primary care will be rationed by the price. Preventative care will be less available to the unemployed and poor. Satellites clinics will be closed.	Unemployment insurance will provide most of resources to unemployed. Dept of Labor will provide job search information. Benton-Linn Community College has experienced a general increase in enrollment during last few years. Workers have been seeking to improve their educational backgrounds to aid in job search.	Increase in drug and alcohol related crime, with some increase in property crimes expected. Overcrowding in jail is possible - earlier release of inmates (furloughs) one response. Domestic violence likely to increase. Patrol activities will be decreased, resulting in delays in response to property crimes. Emergency services are also likely to suffer delays. Continuing education and officer training programs will be curtailed, capital improvement program will be delayed.
<i>County</i>	<i>Health</i>	<i>Education</i>	<i>Law</i>
Polk	No measure of existing or anticipated needs; but recognize increasing pool of poor, dislocated wood products workers and underemployed Hispanic population whose health and needs are not met. Mental health programs rely on grants from state, but will be cutback because of reduced state revenues. No county-supported programs likely to be cutback. No coordination with local food bank or private care providers.	Local community college providing six months retraining program phased with periods of unemployment insurance benefits. Fully dislocated workers assisted in applying for retraining under JJPA and other programs, although few have financial resources to support long periods of schooling. No overall coordination.	Previous cutbacks resulted in dramatic increases in drug and property crimes; anticipated loss of O&C revenues would force cutback in enforcement, with resulting increases in drug and property crimes, and inability to respond adequately to all but life-threatening situations. Expect increases in domestic violence, conflicts and crime.

4/6/92

O & C Lands Income Foregone Amendment

Amend _____ by inserting the following new section:

"Sec. _____. The Act of August 28, 1937 (50 Stat. 874; 43 U.S.C. §§ 1181a-1181j) is amended by striking "Title II" and the immediately following words "That on," inserting in lieu thereof "Sec. 6. On," and adding the following new section:

'Sec. 7. (a) Within fifteen days of the close of the fiscal year in which this section is enacted and each fiscal year thereafter, the counties in which the lands revested under the Act of June 9, 1916 (39 Stat. 918), are situated shall be paid, in the same manner as provided in section 6(a) of this Act, fifty percentum of the income foregone from such lands during such fiscal year as determined pursuant to subsection (b) of this section.

'(b)(1) The income foregone for any fiscal year which shall be the basis for payments pursuant to subsection (a) of this section shall be the product of the volume of timber production foregone for such fiscal year as determined pursuant to paragraph (2) of this subsection and the average of the average annual stumpage prices for timber sold in western Oregon by the Bureau of Land Management in such fiscal year and the preceding four fiscal years.

'(2) The volume of timber foregone for the purpose of paragraph (1) of this subsection shall be:

'(A) for the fiscal year in which this section is enacted and each fiscal year thereafter until and including the fiscal year in which revised resource management plans prepared after the date of enactment of this section pursuant to section 202 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. § 1702) and applicable to all lands revested under the Act of June 1, 1916 (39 Stat. 918), are published, the annual allowable sale quantity for such lands, as established in the Timber Management Plans applicable to such lands on the date of enactment of this section, minus the total volume of timber proposed for sale on such lands in the approved annual timber sale plans for such fiscal year which are applicable to such lands; and

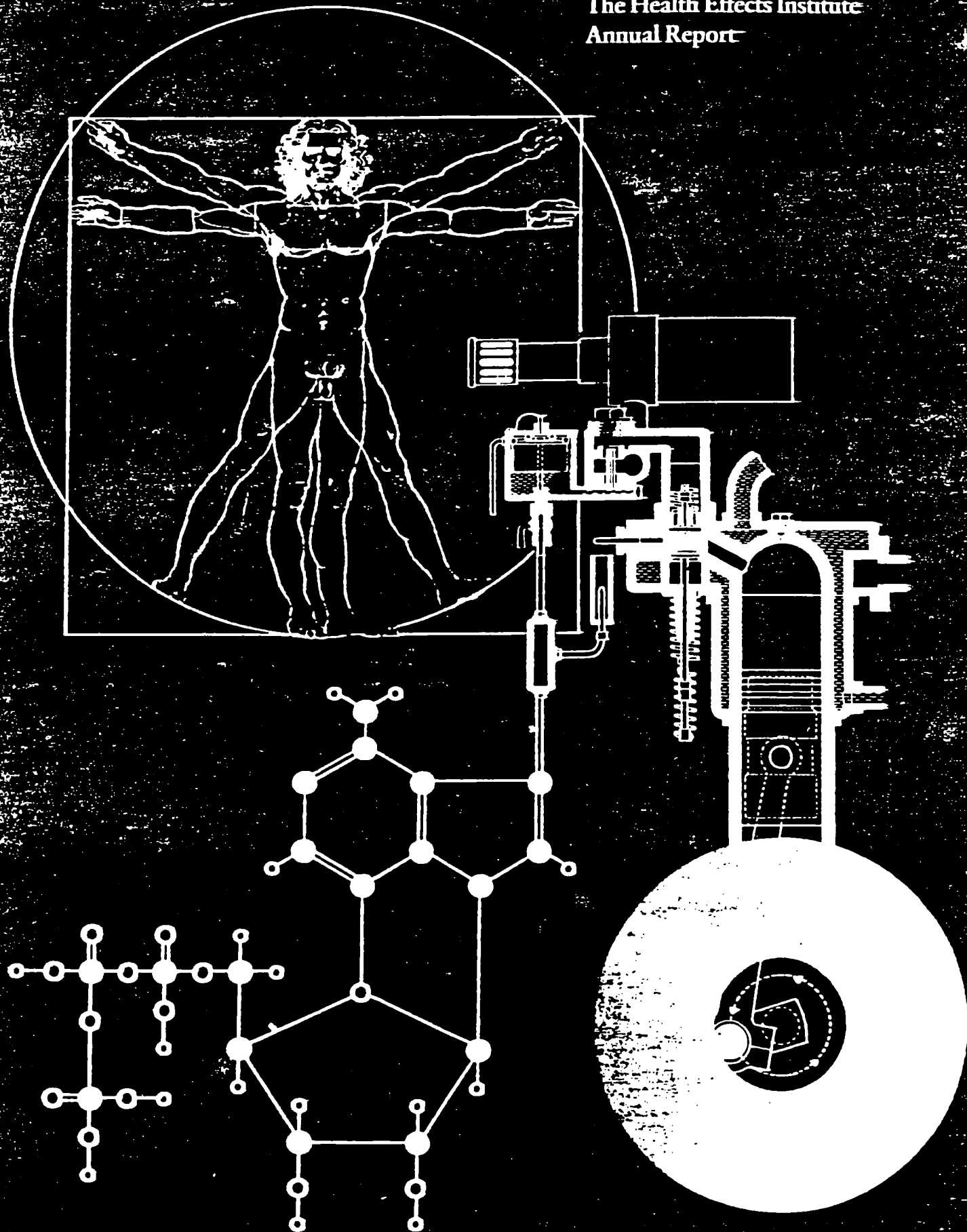
'(B) for each fiscal year after the final fiscal year in which subparagraph (A) of this paragraph applies, the same annual allowable sale quantity for such lands from the Timber Management Plans identified in subparagraph (A) (periodically recalculated to accommodate changes in the commercial forest land base in such Plans resulting solely from new timber production capability classifications and to accommodate changes in forest productivity as evidenced by new forest inventory data), minus the annual allowable sale quantity for such lands established in the revised resource management plans identified in subparagraph (A), and all subsequent

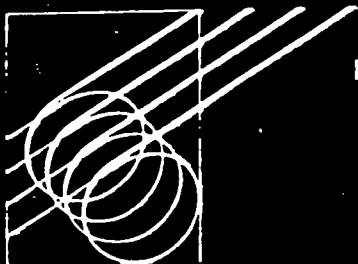
amendments to, or revisions or replacements of, such plans:

Provided, That, if any calculation pursuant to this paragraph renders a negative volume, the volume of timber foregone for the purpose of paragraph (1) of this subsection shall be zero.'".

Profile 1985

The Health Effects Institute Annual Report





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Foreword from the Board of Directors *by Archibald Cox, Chairman*



Archibald Cox
Chairman



William O. Baker



Donald Kennedy



Charles W. Powers

Public debate about health and safety regulation has often involved bitter disputes about the quality of the scientific data and conclusions at its base. The search for scientific truth concerning the health effects of potentially harmful substances has far too often become a battle of pre-committed experts in which each side attempts to contradict the science of the other. The process subverts the purposes of science, debases the scientists themselves, and obscures real social policy differences that ought to be thoroughly debated. Furthermore, the lack of civility between the public and private sectors, and the substantial waste of resources involved in such conflicts between major industrial companies and the government is cause for real concern.

Consequently, I was greatly interested when invited by then EPA Administrator Douglas Costle and encouraged by William Ruckelshaus, while he was in the private sector, to chair a new organization, the Health Effects Institute (HEI), dedicated to quality science in regulation and to building bridges between the public and private sectors. We thought it essential, however, that this new institution be built in such a way that it would be truly independent and thus credible and accountable to the public. Three specific assurances were required:

- HEI must be independent in governance: The Board of Directors must be free to make its own choices based upon facts, after consulting the sponsors and other informed persons, and not be narrowly beholden for its decisions.
- HEI must have two-sector financial support: In order to secure its independent status, HEI must have the kind of financing that ensures both government and industry have an equal stake in the outcome of research.
- HEI must be dedicated to quality science from definition to review: The new institution must be structured to define, select, support, and review research to promote the application of the best science to the possible effects of mobile source emissions.

Senior management in both government and industry took the challenges seriously and gave the assurances. I became chairman of the Board of Directors; the other directors were Donald Kennedy and William Baker. Funding is provided on a fifty-fifty basis by the Environmental Protection Agency (EPA) and all twenty-four manufacturers of cars, trucks, and engines who market in the U.S. The manufacturers and the EPA under successive administrators have committed themselves to the hope that they can rely upon HEI as "the major source of studies on the health effects of motor vehicle emissions in the country."

For planning its research program and reporting the findings, HEI has developed a model process to ensure that, while independent, it is responsive to the needs of its sponsors and produces the highest quality work possible. It is a process to which the other members of the Board and I have devoted considerable time and effort.

In fiscal year 1985, HEI attained fully-funded operational strength for the first time since its inception in 1980. This report, HEI's first, is a profile of our first years of work, including the traditional financial tables, achievement summaries, and greetings from the officers.

But while the formal report serves a purpose, we think it also important to put HEI in perspective – to bring HEI, with all its complex issues and people, to life. To do that, we have chosen one study – the Multi-center Carbon Monoxide Study – as a case study, a vehicle through which we can explore the forces and illumine the personalities that infuse HEI.

We hope this documentary will convey some sense of the conviction and enthusiasm that those of us who are closest to the Institute feel. I know I speak for all the members of the Board in pledging our continued personal commitment to making HEI successful in the years to come, not only for the value of the particular enterprise, but as an example of what could be done by cooperation among government, industry, and the public interest community.

Health Effects Institute Board of Directors

- **Archibald Cox, Chairman**

Carl M. Loeb University Professor (Emeritus), Harvard Law School; Chairman, Common Cause. Formerly Solicitor General of the United States and Watergate special prosecutor. Harvard University LL.B., 1937, LL.D. (honorary) 1975.

- **William O. Baker**

Chairman Emeritus, Bell Laboratories; Chairman of the Board, Rockefeller University. Princeton University Ph.D. (physical chemistry, polymer science) 1938.

- **Donald Kennedy**

President, Stanford University. Formerly Commissioner of the Food and Drug Administration. Harvard University Ph.D. (biology) 1956.

- **Charles W. Powers**

President, Clean Sites, Inc. Founding Executive Director, HEI. Formerly Vice-President, Cummins Engine Company; Professor of Ethics, Yale University. Yale University Ph.D., 1969.

N.B. Just as *Profile 1985* went to press, Charles W. Powers, HEI's Executive Director, became a member of the Board. Thomas P. Grumbly, who had been Acting Executive Director while Powers was on leave, has been named Executive Director and Treasurer. In the pages that follow, however, both are portrayed in terms of their prior roles.

Introduction

A brief history of the Health Effects Institute

Douglas M. Costle, Administrator
Environmental Protection Agency
December 12, 1980, press conference

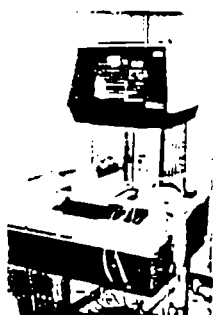
1980 . . . Our understanding of atmospheric chemistry and the subtlety of these problems is still very fragmentary. Nonetheless, the Congress has passed statutes which require us to take regulatory action, usually under stricture of specific timetables. And we often have to act on the basis of what knowledge we have.

In the area of health effects, the fragmentary nature of what we know is even more acute. What we've been searching for is a mechanism by which we can efficiently coordinate the use of both private and public resources to fill in that data base. There is much we don't know that we need to do research on. Our concern has been that we not be going off in a hundred directions at once, that there [not] be unnecessary duplications of scientific research, and that we somehow avoid...doing defensive research.... Because of the nature of rulemaking and administrative law, we are often put in an adversarial setting. But when it comes to scientific data, we really ought to try to start with — as Hank Schacht [of the Cummins Engine Company] put it to me three years ago — “a friendly set of facts.”

William D. Ruckelshaus, Administrator
Environmental Protection Agency
November 14, 1984, World Industry Conference
on Environmental Management

1984 . . . We are beginning to see the emergence of “bridging institutions” between industry and government and even between industry and the green machine (environmentalists). The old hostilities are breaking down, and old grievances are giving way to a spirit of cooperation, a new willingness to listen.

The Health Effects Institute is a perfect example of this potential. HEI is a cooperative effort paid for jointly by EPA and the automobile industry to evaluate the medical consequences of car and truck exhaust gases. Our goal is simply to gain acceptance by all parties of the data that may be necessary for future regulations.



It is impossible to understand what HEI is without understanding how it came into being. The passage of the Clean Air Act in 1970 gave the U.S. Environmental Protection Agency (EPA) the authority to set standards for car and truck emissions that would "allow an adequate margin of safety to protect the public health." That broad charter required the EPA to set standards for carbon monoxide, nitrogen oxides, ozone, sulphur dioxide and particulates emitted from cars, trucks, and buses; but the standard-setting process was fraught with difficulties.

Implementing the Clean Air Act standards was, according to Costle, "one of the most fractious environmental debates" of the 1970's. By 1980, there had already been ten years of confrontation between the EPA and the automotive industry over emission controls, and both sides were also confronting a new pair of requirements (sections 202(a)(4) and 206(a)(3)(b)) imposed by the 1977 Clean Air Act amendments.

Neither the industry nor the EPA were sure how to deal with those two sections. They stated that "...after model year 1978, no emission control device shall be used in a new motor vehicle or new motor vehicle engine which...will cause or contribute to an unreasonable risk to public health, welfare, or safety." Furthermore, the Administrator of the EPA was given authority to "test emissions and to require manufacturers to conduct such tests."

There was trepidation at this open-ended scientific challenge on both sides of the regulatory fence.

Both we and the government found ourselves in the position where the Congress had written into the law the requirement that, in the absence of something like HEI, was virtually impossible to comply with.... It was impossible, from the manufacturers' standpoint, for two reasons: one, we've always believed that the determination of what risk we as a society are willing to accept is not a determination that a private party can make, it's

a societal one...yet we had a law on the books that would have imposed that requirement on us. Two, there is the very practical issue that...the level of risk - setting aside the question of whether that level is acceptable - is a function of ambient loading [of pollutants], and [a single manufacturer is] not the only source of those.

From the government's standpoint, I think the requirements were unmanageable because, under the general principles of administrative law, regulated parties are entitled to know what is expected of them...so the Agency [EPA] was faced with having to specify for us the detailed requirements that we needed to comply with, such as how many constituents you test for, and how you test for them.

Helen O. Petrauskas, Vice-President
Environmental and Safety Engineering
Ford Motor Company

Because the underlying research base to specify levels at which particular pollutants were *not* dangerous did not exist, the Clean Air Act in effect mandated new scientific methods and bold research programs. But the resources required to develop such programs or interpret their results were beyond the means of any single government or industrial institution - both in terms of costs and availability of appropriate first-rate scientists - and required cooperation in defining research.

"HEI was born out of necessity," says Ford's Helen Petrauskas. Her sentiments were echoed by EPA's Stanley Blacker, director of quality assurance management, who wanted to "get beyond the issue of whether the health research results were or were not quality results....we wanted to set up some kind of organization where the results from the initial study, the health effects, would not be disputed; the interpretation of the results would be up to the involved parties - the regulator and the regulated - but the underlying data base we wouldn't be disputing."

A friendly set of facts was desperately needed. But if the need was clear, the way to meet it was not. It remained for one man - Charles Powers - to find the way.

To ignore the exceptional influence of this one man would be to miss a major part of [HEI's] story. While many people contributed along the way, and sometimes in a critical fashion, there would be no Health Effects Institute without Charles W. Powers. From concept, to founding, to implementation, Powers drove the process.

Thomas P. Grumbly, Acting Executive Director
Health Effects Institute
*In "The Health Effects Institute and the Future of
Regulatory Science"*

Powers started working on the concept of HEI in 1978, as an almost accidental outgrowth of his involvement, while an executive at the Cummins Engine Company, in the legislative process surrounding the 1977 amendments to the Clean Air Act. In 1980, after surmounting such major obstacles as funding and scientific process, he almost abandoned the project because of his inability to devise an acceptable governance mechanism. The breakthrough came about two miles outside the Baltimore-Washington International Airport, while he was driving collaborator Mike Walsh, then at the EPA, to catch a flight.

We got the idea to have a Board of Directors with three people that everyone respects. I think that was the breakthrough moment in HEI's life. The notion of having more than just a chairperson – a whole board – function in that way was unheard of, unprecedented. The idea of making independence inherent – you could never have any constituency directing Archibald Cox, Bill Baker, and Don Kennedy [HEI's directors] to do anything – that was right. But it took us a very long time to figure it out.

So we had this idea – but we didn't think there could be more than three statesmen in the whole country who would have those characteristics. Everyone said, "That's exactly the right way to do it, but you'll never find three people of any stature who will do it."

Charles W. Powers, founding Executive Director
Health Effects Institute

Powers persisted and compiled a list containing several hundred names of the requisite stature. He eventually winnowed it down to the right team of three, three who would do it, gladly – each member of the current board accepted the job without a moment's hesitation.

The Articles of Incorporation for a non-profit corporation "organized and operated...to support the conduct of, and to evaluate, research and testing related to the health effects of emissions from motor vehicles" were signed in May 1980. HEI's establishment was formally announced at a press conference in December of that year. The hopes and dreams that abounded then were captured most succinctly by the words of one of the new board members:

We now have a framework within which the scientific data that supply the basis for public policymaking will be produced under the best scientific auspices, and thus in a way that, so far as possible, will assure their credibility to EPA, the industry, public interest groups, the Congress and – most important – the public. As long as scientific research on the health effects of motor vehicle emissions is needed, I expect the Institute will provide it in an authoritative way – without regard to political philosophy or viewpoint on policy issues.

Donald Kennedy, Director
Health Effects Institute

With Powers at the helm as Executive Director, the Institute sprang into action. But the early years of any new institution are ones of testing and coalescing; the careful planning that preceded HEI's launch gave the fledgling organization a head start, but could not catapult it directly into adolescence. The first tests were passed when top-notch scientists were drawn to HEI's standing committees, the Research Committee and the Review Committee. Although their commitments were encouraging, it was always clear that these outstanding scientists would remain with HEI only as long as the independence of the Institution was vouchsafed.

That inevitable watershed also came in the early years, culminating, according to several accounts,



when members of HEI's Board and Research Committee walked out of a meeting with government and industry sponsors rather than submit their research agenda to outside review. After that, the drama was more low-keyed, centered on exploring, understanding, and charting the gaps in the existing data base of environmental science. The Research Committee, chaired by Walter Rosenblith, led this effort. By the spring of 1982, the first set of Requests for Applications was issued, followed by the second set a year later. The first contracts were actually let in the spring of 1983, and in the summer of 1985, the first final report – on a small, well-defined project – was released to the sponsors. By the middle of 1985, all of HEI's organizational engines were operating at full strength.

Now HEI is old enough and established enough that the questions are focussed, appropriately, less on the Institution's survival and more on its performance, on the emerging science that is its *raison d'être*. In a recent letter in which the EPA administrator reaffirmed the agency's intention to continue funding HEI, he also commented that:

HEI has completed its start-up phase and is now entering another critical stage. Results from relevant health effects studies will become available over the next several months for use by the EPA. Issues of relevance, timeliness, and quality will be analyzed by all interested parties. EPA expects during this stage to document that HEI-funded study results are important to the decision-making process....HEI has established an excellent review process under the leadership of Dr. Robert Levy.

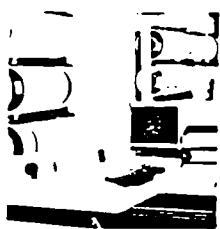
Lee M. Thomas, Administrator
Environmental Protection Agency

As Administrator Thomas notes, the review process began full-scale operation only recently, although the Review Committee has been preparing for its work for over a year. This seeming delay simply reflects time lag, the gap between money going in and science coming out. This year – fiscal 1985 – marks the first year that any experimental results have emerged from the HEI process. Hence

it is the first time the Health Review Committee – the last of HEI's organizational components to become fully operational – has been called into action.

During the course of the next year, many more studies will come to fruition, including some that represent major commitments on the part of HEI. A special section – “Perspective” – is devoted to one of them, the multi-center study on the acute effects of carbon monoxide exposure on subjects with angina pectoris. Although this study is not entirely representative of HEI's research agenda, it has nevertheless been singled out for attention. Why? Partly because it reflects a mode of operation in which quality science and near-term relevance are merged. Partly because of its sheer size – HEI will spend more than \$1 million in 1985 and 1986 to complete and evaluate this set of studies, making it the largest single experiment underway. Partly because it represents an immediate application of quality science to a real-world standard-setting issue – as one knowledgeable observer put it, “...results of the CO multi-center study will strongly influence, if not determine outright, the next setting of the National Ambient Air Quality Standard for carbon monoxide.” And partly because its intricacy makes it a wonderful vehicle for illustrating vividly – instead of merely documenting – how HEI works and how quality science is done.

We hope that, in reading “Perspective”, as well as the rest of *Profile 1985*, you will get a sense of the spirit of this place, the problems and possibilities involved in doing quality environmental science, and something of our hopes for this kind of science in the future.



From the HEI Board of Directors

Six years have elapsed since the creation and public announcement of HEI, and about three years since the beginning of the research program. HEI has, in some important respects, already fulfilled many of the aspirations of its founders and sponsors. It has attracted a first class group of scientists to guide it and to do its work. It has funded fifty different projects at two score of the best institutions in the western world. By our own standards and those of external evaluators, the United States General Accounting Office, our research is credible and of high quality. All of the research is useful, and much of it is of immediate regulatory importance. We should be content.

HEI, however, was created by people who had a larger vision of fostering institutions that would bridge often competing sectors. Are we achieving this vision? Though it is dangerous to compare visions to reality, we gathered at the close of this fiscal year to do just that, at the National Academy of Sciences' facility at Woods Hole. This "retreat" was a time of withdrawal from the demands of ordinary life for the purpose of considering at some leisure fundamental questions that are not raised in the urgency of daily business. Our institution is unusual, in all its facets and relationships; we found there were yet many questions to be considered, more than could possibly be resolved at one short retreat. Perhaps that alone answers the main question: the vision has not yet been realized. The sun has not yet really risen on the era of private-public research institutions, although the light is breaking.

A central theme at Woods Hole was one which will shape the emphases of HEI over the coming year. First-rate science was HEI's principal near-term objective at the time HEI was founded. Thoughtful leaders both at EPA and in the automotive industry realized that everyone – EPA, the industry, and the public – would gain if regulators could base their decisions on actual knowledge about risks rather than on assumptions adopted in the absence of knowledge.

First-rate science remains HEI's *raison d'être*. But given HEI's commitment to quality, the relevance of HEI's science agenda has been the subject of considerable attention this past year. It will undoubtedly remain the subject of such attention for the foreseeable future. HEI intends to grapple with this issue in two ways.

First, we must arrive at a working definition of "relevance" that has both scientific and regulatory integrity. We firmly believe that the path to greater regulatory credibility is through a research program that mixes short-term regulatory needs with other projects that advance our ability to extrapolate to human experience. Regulators are, of course, used to dealing with the results of animal tests as indicators of human risk. For regulation to be believable by the citizenry at large, however, we must develop better linkages between test species and man. Improvement requires the ability to take risks, not all of which will have immediate payoff.

Second, we must also find ways to enhance relationships with those who see HEI as competition in a difficult budget environment. The Board and Committees of HEI have no careerist objectives; rather, we seek to test in the mobile source environment the hypothesis that government, industry, and academia can work together more effectively than in the past. To demonstrate this requires time, money, and patience.

We have no doubt that HEI will meet these challenges with the flair, distinction, and commitment to excellence that have characterized the institution from the start. The sponsors and the public deserve no less; and those who work at HEI, we believe, know no other way.

Archibald Cox, chairman

William O. Baker

Donald Kennedy

Charles W. Powers

A Message from the Chairman

The Health Effects Institute's ninth year brought continued progress in our chartered mission to provide the Environmental Protection Agency and the manufacturers of motor vehicles with the best achievable and publicly credible scientific knowledge concerning the effects of motor vehicle emissions upon the public health. We are especially pleased by the still growing support of the scientific community and the increasing interest in HEI's work even among scientists not directly concerned with environmental problems. The HEI method has been successful not only because the Institute has attracted strong scientific support but because it has developed a new and valuable form of peer review. The Review Committee, wisely gone well beyond the conventional peer review required by scientific journals to develop reports appraising the significance of HEI-sponsored research, fitting the findings into the existing body of relevant knowledge and pointing to avenues of further inquiry. During the past year the Research and Review Committees have begun a thorough review of this method with a view to minimizing any problems for researchers while retaining the important benefits.

HEI has operated for five years upon the same dollar budget, despite the very substantial inflation of research dollar costs. There is need for a large amount of additional research into the health effects of motor vehicle emissions, especially in the areas of ozone and other oxidants, and alternative fuels such as methanol. The Board of Directors has asked the President and his staff to prepare a documented request to both government and industry sponsors for substantial additional funds—at a very minimum for the funds necessary to support the same level of research as was carried out in the early years of full operation.

The larger goal of HEI's founders was to demonstrate by example that a government agency, the EPA, and a private industry can, by working together through a jointly sponsored and jointly financed but otherwise independent institute, provide a far sounder and more publicly credible scientific basis for regulatory decisions affecting the public health than either could provide alone. In the spring of 1988, EPA suggested that HEI undertake such a role in studying the effects upon public health of asbestos in public and commercial buildings. Congress appropriated \$2 million for EPA for research "under the auspices of the Health Effects Institute...to determine actual airborne exposure levels prevalent in buildings, to characterize peak exposure episodes and their significance, and to evaluate the effectiveness of asbestos management and abatement strategies in a scientifically meaningful manner," provided that those funds were matched by a full range of interested parties in the private sector. HEI's study team, under the chairmanship of Charles W. Powers, conducted a thorough study over the next six months.

In March 1989, the Board of Directors determined that if the joint support of EPA and the private sector interests were forthcoming, the Board would establish a new corporation, HEI-Asbestos, to undertake a scientific review of the present state of knowledge concerning the extent and effects of asbestos exposure in public and commercial buildings, and to conduct additional research along lines presently foreseeable or defined by the study. The organizational structure would parallel the lines of the present HEI committees and staff and work sufficiently closely with them to draw upon HEI's experiences; but would otherwise be separate. This form of undertaking should not only carry the important HEI idea into a new area of regulatory research but confirm and strengthen HEI's role in the field of motor vehicle emissions.

At the start of 1989 we were happy to welcome as the President Dr. Andrew Sivak, whose widely valued research and management experience with Arthur D. Little Inc. make him admirably fitted to lead the organization in carrying forward our work in the field of automotive emissions and to extend the HEI idea to other fields. The continued progress of HEI during the past year, prior to Dr. Sivak's appointment, was made possible by the skill and devotion of Dr. Rashid Shaikh and Dr. Jane Warren, who served as Acting Executive Directors during the long period in which that post was vacant. The sponsors as well as the Board owe them a profound debt.

Archibald Cox

Portrait: Archibald Cox

Archibald Cox is, in these cynical times, one of the few institutions that people still believe in. For the nation as well as the Health Effects Institute, he is a living symbol of independence, scholarship, and integrity. His role as Watergate Special Prosecutor is, even now, a matter of historical record; he was an essential figure in perpetuating the principles that make this government possible. His distinguished record as Solicitor General, recently discussed in *The New Yorker* (August 10, 1987), is less well known to those outside government and legal circles, but equally significant. The following remarks were taken from a recent interview with Prof. Cox at the University of Colorado Law School, where he is spending part of the 1987-88 academic year.

People don't realize, I suppose, that my field was labor law. That background is very relevant to the question, "What are you—a lawyer and a law professor—doing interested in HEI?" My interest in labor law—or broadly, labor-management relations, arbitration, mediation, with perhaps emphasis on mediation—is concerned, in the more abstract sense, with institutions for getting people to work together.

Why, then, did you choose law?

Why, that's what law's all about.

But the huge backlogs in the courts...

That wasn't the way until fairly recently. I grew up in two families of lawyers, which is a way of saying that there were lawyers on both my mother's and my father's side. My father was a lawyer, his father had been a lawyer. When I was a boy, what you would most frequently hear was, "No good lawyer ever takes his client into court. He wouldn't let his client go to court."

In a sense, even courts enable people to live together in society. But the most creative work of lawyers is not in the courtroom. After all, if you go back to the Constitution, apart from Washington and Franklin and perhaps Gouverneur Morris, all the leading figures that wrote the Constitution were lawyers.

One thinks of the legal imagination that went into the development of the industrial revolution, into mass production and mass consumption. The technology alone wouldn't have done it, although it was obviously necessary, but somebody also had to imagine various corporate devices. Someone, some lawyer, had to imagine the traditional sales contract to make possible large scale credit, mass buying. In labor-management relations, an awful lot of the creative people who developed the institutions for mediation, arbitration, making compromises that go into a collective bargaining agreement, were lawyers.

Legal devices, to work, require fairly precise articulation. And good lawyers are masters of words and of the implications of words, in a more precise sense than Shakespeare was a master of words. More important, but not to forget the words, is that lawyers are in the habit of saying, "What if? what if? what if?" and if you're trying to think of lasting arrangements, you have to do that.

Nevertheless, for one reason or another, the emphasis in the last 15 or 20 years has shifted very heavily to litigation. If you go back to the big law firms in the old days, the litigation department—it wouldn't even have been called a "department" then—was sort of a poor cousin. They didn't bring in much money. Yes, we had to have a litigation department, there are some people who wanted to be litigators—I wanted to be a litigator, and it was largely chance that I happily got trotted off into labor-management relations, first in private practice, then government.

I'm afraid that, taking the legal profession as a whole, one sometimes worries that whatever is the mean or the average or the typical level of lawyer concern for the community, or his devotion to justice, when it comes to pressing his client the level is a good deal lower than it used to

be. I often think, in this connection, of the great lawyer and public servant Elihu Root, who was quoted as saying, "I spend most of my time telling my clients that they can't do what the law permits them to do because it's a rotten thing to do." I just wonder how many Elihu Roots there are today.

What was growing up in two families of lawyers like?

I was the oldest of seven, four brothers and two sisters. I never sensed the pressure to be a lawyer. I can't tell you the day when I wasn't going to be a lawyer.

I sometimes do think there are great advantages in belonging to a family whose history you know and some of whose members have been important, or at least not unimportant, worthy of some kind of note. One of the figures who had an influence on my life, although I never knew him, was my mother's grandfather, William Maxwell Evarts, who in the 1840s and 1850s was a very successful, distinguished lawyer, an anti-slavery Republican who argued a number of notable cases in the Supreme Court against slavery. He was also Andrew Johnson's counsel in the impeachment proceedings, and then he went on to be in the Cabinet and a Senator from New York. Another ancestor was Roger Sherman, one of only three or four people who signed the Declaration of Independence and the Articles of Confederation and the original Constitution.

I did study labor law when I was at Harvard Law School. It was a very small course—out of a class of, I would guess, 430 to 450, there were fewer than 20 of us who chose to take labor law. I saw the only real lawyers as being those who could stand up on their hind legs and try a case, or argue a case, in court. My greatest shame is that I never tried a jury case.

I've been very lucky. There isn't any place in the world for a lawyer, possibly even including the nine seats on the Supreme Court, that is as challenging and satisfying as Solicitor General. I was there at a time when big constitutional issues came up. It's also an unusually satisfying place for a lawyer because, to a much greater extent than any other area in government, the Solicitor General is independent: he's sometimes referred to as the conscience of the government.

But it was your labor-management background and your related experience with the "tripartitism" of labor, management, and independent mediator, that you felt could be applied to HEI's "tripartite" mix of regulator, regulated, and independent public auditor?

Because it seemed to have some relevance to the kinds of things I'd been doing in the past, HEI appealed to me. I never supposed that I would contribute very much to the scientific research. I had worked relatively little with scientists.

Another thing I thought I might contribute: on a few occasions I've had to learn something about science in the course of practicing law. I thought I might be useful in the process of taking the scientists' words and putting them into language that the policy makers or the public could understand. I thought that, on occasion, that might be a very important function of HEI and ultimately of the Board of Directors; for the most part it's been done by the Review Committee, but we've been involved some.



Portrait: Archibald Cox

In this connection, I think of an early case I had as Solicitor General. It involved an administrative law problem relating to the construction permit granted for a fast breeder reactor at Monroe, Illinois. I spent nights for about a month learning atomic physics, which I thought I knew and understood at least until the day after I argued the case, when I no longer had any need to remember it or understand it. Whether I really understood it, I don't know. I doubt I was meant to quiz atomic scientists and so forth. As I saw it, the crux of the case was to persuade the court that this isn't really very scary at all: here's this man, obviously trained in Latin and Greek, and he makes it all simple for us, it can't be a great mystery. In the lower court, the government had lost, you could just tell, because the judges could hear nothing but that bomb ticking, right next to downtown Detroit. And the only way to dispel that feeling was to make it all simple, easy. I sometimes look back with some irony because I believe that reactor has never worked; there are others, but I believe that one has never been in active operation.

So that, and knowledgeability about government and how government works, those are the relationships I subjectively hoped to bring to HEI. Other people said, "Well, you bring a reputation for independence, that's terribly important." Let them be the judges of that.

So far as working with the scientists goes, Don Kennedy was guarantee enough. I think that being told that he would do it [join the HEI board] was a highly important factor, if not a critical factor, in my judgment. I think he told me that my saying I would do it was a critical thing with him. I don't know which came first, the hen or the egg. And of course I mention Don because chronologically he was on board before Bill Baker; I have the same sort of feeling so far as science and integrity go, about Bill Baker. And it's also of much importance to HEI, and certainly been a source of pleasure to me, that Walter Rosenblith became head of the Research Committee. (Walter and I had known each other in the late 1960s, when he was Provost at MIT and I had administrative responsibility on all matters involving actual or potential student unrest at any of the Harvard schools.)

I think that HEI has attracted a high level of science—both in the character of the work done and the character of the people doing it—that neither government alone nor industry alone could attract. Nor would as much of it be focused on the health effects of automobile emissions. Second, in terms of the accomplishment, I think the kinds of discussion, exchange of views, cooperation in making comparisons and reaching conclusions, that has been stimulated, particularly by Bob Levy and the Review Committee, and to some extent by their dialogue with the Research Committee, has been innovative and constructive.

One of the [research program's] products might be something that was of importance in the scientific world, and not in the regulatory and commercial worlds. Namely, it may be that this new, and far more searching, review process that HEI has installed, and the thrashing things out between the researchers and the reviewers, and the number of reviewers from different branches and different disciplines—which is something science has done very little—will turn out to be a creative way of carrying out science. Peer review in the past has generally been the editorial board of a journal. The Review Committee has developed it way beyond that. But the results, except for a few researchers severely criticized, have on the whole been encouraging to people involved with the process as a method.

Portrait: Archibald Cox

I saw HEI as an experiment by two parties attempting to recognize a common responsibility and work together, with the aid of independent persons. It began with cooperating and getting facts: really not simply the facts themselves but scientific data or possible scientific conclusions about making a program, deciding what to study and what not to study. These things would have to be thrashed out and ultimately decided by HEI. I've always thought the thrashing-out process, including the input of the parties, deciding on what our research program should be, was of the utmost importance. We wouldn't be doing the job if our research committee just went off by itself and decided on programs.

What surprises have you encountered in working with HEI?

The biggest surprise to me about HEI was a surprise attributable to my own naivete. I'm serious when I say my own naivete: I thought things would go much faster. If I need some research done, in a legal sense, I have a corps of young lawyers, I order it up, they sit up all night, and the research is done within 72 hours. So that when we talked about HEI studies and reports, I don't think I realized—I know I didn't realize—quite how long it would take to bring even some preliminary studies to fruition.

Do some of these studies have regulatory consequences? Certainly some of them are relevant. The gasoline vapor study, for instance, didn't perhaps involve any new research, but the review of what is known in the literature, with respect to the effects of aldehydes, the probable effect of more use of methanol, has policy consequences in terms of government encouraging or discouraging the use of methanol. But so far they haven't been things that have had great consequences in terms of cost to the industry.

There also are studies in progress that may well have major consequences in terms of regulation for the protection of public health. That we have not yet come up with anything of that significance is partly a reflection of the necessarily slow pace of research in these areas; but it's also possible—in purely abstract theorizing—that there is nothing important to be found. That's an abstract speculation: I don't hold that as a view. I don't think there's any reason for me to have any view, one way or another. We need to find out, but sometimes the thing you find is, "Well, there's nothing terrible happening here for the regulators to do something about."

Not every project has been done better than any project has ever been done before. Unfortunately, one has some rough spots as well as the slow but encouraging spots. On the whole, there seems to be a general consensus that we have been unusually successful in that respect. If you say, "Well, how far is that due to the fact that this is an experiment," I say, "Well, I hope it is due to the fact that this is an experiment." I think people ought to be attracted to experiments in new institutions for bringing diverse interests together in solving common problems.

Ideas get generated sometimes as sparks, flint and steel. They get generated when people try to talk things out, and maybe heatedly debate things out, provided they have some sense of common responsibility in the end. ■

Portrait

William O. Baker



"You have to come in without compromise on the articles of faith . . . that science is necessary for a great nation."

— William O. Baker

William O. Baker permits only the merest glimpses of his childhood. "I was curious," he says. "I liked natural phenomena. I liked to observe nature, and I had these encouragements from my mother, who was interested in poultry technology, and my father, who dabbled in mineralogy, about novelty and innovation. This is the old story; you can get this from 99 percent of the scientists and engineers that ever were. They did what they could. . . . I only mention it to assure you that I come

by my commitment to innovation and new actions genetically. I'm not going to tell you much more" It avails one little to protest or persevere. "I don't want to divert you," he explains gently but unflaggingly. "Give me a defined area and I'll do my best to respond to it."

One may as well accede to Dr. Baker's terms gracefully, first, because he offers no choice, and second, because the "defined areas" — which range over nearly five of the most exciting decades in the history

of science, and every administration since FDR's – are hardly confining. Dr. Baker left Princeton in 1938 with a PhD in physical chemistry and an interest in the science of solids, and joined Bell Laboratories (now AT&T Bell Laboratories), an institution that was not yet pre-eminent in solid state physics and chemistry. As a bench chemist – “the only good kind” – he pioneered, during World War II, the study of microgel structure, which later provided part of the basis for the synthetic rubber program so crucial to the war effort.

He pursued his interest in synthetic polymers, macromolecules, “because they were the best dielectrics, the best non-conducting materials, of which communications and telephone and information-handling systems were made.” That pursuit led, in the early '50s, to polymeric carbon, that “startling form of carbon,” he explains, “that is used in all composites now, in making airplanes and rocket casings. It will appeal to you,” he adds, wryly, eyes signalling his delight, “that its first commercial use was in sports equipment.”

The patrician and scholarly Baker glows with an almost boyish delight, a sense of wonder, a perpetual joy in discovery that years of research, wonder, and discovery have not dulled. He speaks casually, in distinctive rhythmic cadences, of the titans of modern science or discoveries that have changed, literally, the texture of our world. Belying that casualness is the excitement he conveys through crystal-clear, China-blue eyes, and through animated, articulate, and continual hand movements.

He loves the laboratory. “I did everything I could to stay [a bench chemist], until at least 1951, but I did hang on, really, until 1954 or '55. I was in charge of chemistry and materials work in '51, but I managed to delegate enough responsibility so I could keep some laboratory work going.” Such “escapism” on his part was not only countenanced by Bell Laboratories' management, it was, as were virtually any creative or innovative activities, actively encouraged and supported – tacitly or explicitly, overtly or covertly, to befit the circumstances:

Now [John R.] Pierce, a great scientist – he's at Stanford now, long retired from [Bell Laboratories] – had written fiction about communication satellites. So had Arthur Clarke. We said, “Let's do it.” And so here was a case where this environment was so important. . . . AT&T, and in fact, the top of the Bell Laboratories, said, “Well, this is so crazy that we can't give you official support, but you do what you think is best.” And Pierce and I decided this on our own, using, of course, extensive resources of the Laboratories. Because the Bell Laboratories then was an autonomous corporation – Bell Laboratories Incorporated – and that's the way it was during my whole period there. So we generated satellite communications.

Among his subsequent achievements was the discovery of how to modify and process polyethylene – the most widely-used polymer in plastics – so that it





doesn't crack. This work later transformed polyethylene and other synthetic polymers into a class of structural materials of major importance; polyethylene eventually replaced lead as the material used to sheathe communication cables. Dr. Baker's work also led to the development of heat shields for missiles and satellites, and a whole host of national security-related items. In the course of his career, he has been granted 13 patents, written some 95 scientific papers, contributed to 20 books on science, public policy, and research management, and acquired 25 honorary degrees and innumerable other honors and distinctions.

Ultimately, he became president and then chairman of the board of Bell Laboratories, presiding over that bastion of scientific creativity during a period that saw the birth of some of the twentieth century's greatest technological breakthroughs. In his role as leader and director of research, he went beyond what he calls "personal or individual conventional scientific things" to "a quite different population of technologic or scientific strategic choices, in which a great deal depends on finding individuals, other people who are very bright about things and know something, and then saying, 'We need what you can do, why don't you do it, and we'll get you all the resources to do it?' And in most cases they would do it." As a result, says Dr. Baker, "we got a great deal

of joy" out of such advances as the solar cell, the transistor, integrated circuits, the laser, satellite communications, photonics transmission, cellular telephony, electronic switching, the UNIX computer operating system. "In fact," he reminisces, "we managed to coerce or otherwise encourage a number of our colleagues — some six of them — to follow that path to Stockholm from our laboratories; all of our people except Davisson got their [Nobel Prizes] in my time."

But in parallel with these scientific efforts, Dr. Baker was also pursuing another, still larger, agenda:

From '56 on was a kind of transition that I worked on, in addition to maintaining primarily, of course, the Bell Laboratories' interests. My conviction is that modern science and technology, which is recognized as the characteristic quality of twentieth century civilization, should be applicable to public needs. That was very much supported and fostered by my environ. the AT&T and the Bell Laboratories. We had a tremendous responsibility because, you see, until we were smashed by the government in 1983, the whole future of communications and our obligations to the people of the USA were very deep. We followed that, we believed in it, we pursued it, so that broadened us. We committed our efforts to find what science would mean for new technology and correspondingly, *how* that technology, which was unanticipated by the politicians or the government or the industrial people, could serve the public interest.

Public service, in one form or another, has since become a way of life for Dr. Baker. He has been very directly involved with the federal government since the Eisenhower administration (see adjoining "Remembrance of presidents past") and has also served in a host of government-related or private sector initiatives that could certainly be described as broadening. Thus, he was a member of the National Commission on Excellence in Education, which prepared a final report entitled *A Nation at Risk: The Imperative for Educational Reform*; he co-authored an American

Chemical Society monograph called *Cleaning Our Environment: The Chemical Basis for Action*, which has become something of a classic; he worked with the National Cancer Program and reorganized the National Library of Medicine; he has been a founding member of the National Commission on Libraries and Information Science, which he describes as "an effort to get bibliography organized. . . . It's the next step beyond Carnegie, who thought there ought to be libraries;" and, as part of his continuing interest in educational reform he is currently a "co-



Remembrance of presidents past

*Much have I seen and known; cities of men
And manners, climates, councils, governments,
Myself not least, but honour'd of them all . . .*

— Alfred, Lord Tennyson

William O. Baker has served government in many and various capacities under every president since Eisenhower; even in the Carter administration, when he was not a direct presidential appointee, he continued to serve "unconstitutionally," working with a number of congressional committees. During these years, his remarkable vantage point has allowed him to perceive different attitudes towards science and technology within each administration, differences he links directly to the temperament and interests of the incumbent president, rather than to any fundamental underlying differences in ideology. Drawn from the panoply of his experiences over the years is the following brief but illustrative vignette.

John F. Kennedy took a keen interest [in science], but rather more in what you call cultural terms . . . feeling that science was part of American life, and therefore encouraging it on that basis. We worked very closely, partly because, for one thing, [Jerome] Wiesner [the

president's science advisor] had very good rapport with him. Nobody had told Kennedy how he could react to missile threats; Wiesner and I got in the Oval Office during the very first days of his administration and we said, "You're supposed to have a telephone here that links with the BMEWS [Ballistic Missile Early Warning System] system, Mr. President, haven't they told you about this? You have the responsibility for the whole national effort." He said, "Nope, nobody ever told me about it, and I don't know where it is." So Wiesner and I got down on our hands and knees and eventually Kennedy joined us and we looked through his desk. And we found it, down in the bottom drawer of the desk. The wires were connected, but somebody — this was a very secret operation — perhaps wanted to protect it, and had hidden it down in the bottom of the desk. Later, [Kennedy] picked a couple of us, me in particular, for the national security aspects, and he took us very intimately into his affairs, and literally into his life and the so-called mansion part of the White House, to work on those matters.

conspirator" in the AAAS program to re-cast the public school content of mathematics and science.

The depth and breadth of his interests is nothing short of amazing: education, writing, science, telecommunications, and, apparently, literature – his speeches are studded with quotations from Wordsworth, Browning, Donne, Bacon, Santayana, and Milton. It is unsurprising, then, that he was the first person to be elected to the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. Equally fittingly, he was recently awarded, at the National Academy of Engineering's annual meeting, the Arthur M. Bueche Award for "a lifetime of visionary and dedicated service in the advancement of technology, for inspiring leadership in engineering research and education, and for wisdom and guidance to government and industry."

"Why do all that?" asks Dr. Baker, echoing the interviewer's question. "Mostly because of a desire, a commitment, maybe desperation, to see science and technology serve these public purposes."

Words like "desperation," unfortunately, bring us very much to the present, to an era of Gramm-Rudman and intense fiscal pressure on the sciences (what Donald Kennedy speaks of as "Science in an Age of Scarcity;" see *Quality Science* in this issue). How does Dr. Baker see such forces impinging on HEI? "That's a terrible hazard," he says. "There's where you have to come in without compromise on the articles of faith. The articles of faith are, first, that science is necessary for a great nation. And if you believe that, then it's easy to know that environmental science is necessary for a great nation. . . . Therefore, if you believe that, you will carry on."

As Dr. Baker views matters, HEI is making progress. "But," he says, "the question is, Are we getting the ultimate quality of researcher? We don't have Einstein working on air quality yet. The [Research Committee], which we think is a

superb assembly, is getting there, trying to identify new talent, getting people of a quality that the EPA and the environmental movement never involved, even a few years ago."

Part of what drives Dr. Baker is his strong conviction, derived from "working for years within the bureaucracy of national security affairs and large complex systems," that it is emphatically not "presumptuous" to suggest we have something here, that environmental efforts likewise can derive much benefit, certainly more than they have in the past, from applying the full power of quality science to the service of society. "There's room to go," he says, "there's room to go with respect to the quality of science. There's a *greaaat* deal of room to go with seeing whether the EPA and the governmental community – this involves the states as well – have a way of applying this knowledge. It comes to a question of whether the national community – government and industry, but government particularly – is able to use science, to absorb into the system of environmental protection the findings in the way that I have been talking about all afternoon. Science can do things for the nation in a variety of ways. Well, we've got the military, we've got the [National] Science Foundation, we've got the universities, we've got the other parts of government – NASA and so on. Now the thing that remains to be seen is whether EPA is able to do that kind of assimilating."

In so speaking, Dr. Baker has, in effect, come full circle, returning once again to a thesis he calls the "paradox of choice" that he first sounded years ago. He still feels the challenge – perhaps now more than ever – confronts science and society:

The paradox of choice for the research scientist is, of course, the choice between doing what his interests impel him to do and doing what some large part of society might seek to have done. . . . One of the strongest forces of life, man's curiosity and the satisfaction he gets out of exercising it according to his own bent, *can* be coupled with the needs and ambitions of the human race. □