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UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF)	
)	
COMMONWEALTH EDISON COMPANY,)	Docket Nos. 50-237
etc.)	50-249
)	50-254
Quad Cities Units 1 and 2)	50-265
and Dresden Units 2 and 3)	
)	
Amendments to Facility)	
Operating License Nos.)	
DPR-19, DPR-25, DPR-29 and)	
DPR-30.)	

May 3, 1979



Dear Board Members:

In its "Memorandum and Order following Special Hearing Conference" dated April 19, 1979 the Board invited Petitioners NRDC and CBE to file not later than May 3 materials such as newsletters, annual reports etc. which they believe the Board should consider in deciding whether to presume that they are authorized to represent the interests of their affected members in intervening in this proceeding. I take the liberty of forwarding the 1977-8 NRDC annual report and other NRDC and CBE materials which Petitioners sent me at my request last winter. These materials support Applicant's position that both NRDC and CBE conduct a broad spectrum of environmental litigation, and that in neither case is the "sole or primary purpose" of the organization to oppose nuclear power in general or the Dresden/Quad Cities trans-shipment proposal in particular. Houston Lighting & Power Company (Allens Creek Nuclear Generating Station, Unit 1),

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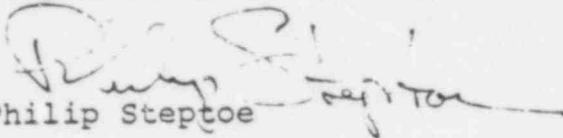
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PAGE TWO

ALAB-535 (April 4, 1979) (Slip op. at 38), as quoted in this Licensing Board's Memorandum and Order of April 19, 1979, at page 4.

Respectfully submitted,


Philip Steptoe

CC: See attached Service List

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A Message From the Chairman of NRDC's Board of Trustees

Not long ago I took some time to look over NRDC's membership lists. It was an interesting and a gratifying experience in several ways. I took a great deal of satisfaction in seeing how the list has grown—from 1,500 members in 1971, when we began our membership drive in earnest, to 37,500 members in early 1978. And it is good to know that NRDC members can be found in every state, and in 18 foreign nations. But the one thing that struck me as most remarkable was how many names I recognized from those very early days, back in 1970, when the word "environment" was still a relatively new one and NRDC had one lawyer, one secretary, a one-room office, and plans to bring a lawsuit against the Tennessee Valley Authority for strip mining in Appalachia. I also noticed how many people who have been members for years make not one but several contributions in a year, and how many give us not just money but ideas (a number of which have led to successful lawsuits) and valuable contributions of time and energy.

I reflect upon this now because, as NRDC enters its ninth year, having grown in influence, expertise, and accomplishments, the loyalty of our members is still the most rewarding thing of all to me and, I believe, to everyone on the staff. So, to all of our members, a most sincerely felt thank you.

About the Natural Resources Defense Council

The Natural Resources Defense Council was incorporated in 1969 to bring legal actions on environmental issues. NRDC is a nonprofit, non-private charitable membership organization, which works to protect America's endangered natural resources and the quality of the human environment. Since 1972, membership has grown from 1,500 to 37,500; offices are located in New York City, Washington, D.C., and Palo Alto, California.

NRDC's cases and projects are selected in a variety of ways. Our staff attorneys, scientists, planners, and board members continually analyze environmental issues of major importance and recommend actions themselves. At the same time, we are often contacted by other national environmental organizations, governmental agencies, local citizens groups, or NRDC members, who present us with a problem and ask our assistance.

The scope of NRDC's projects has grown dramatically in just eight years. We are involved in virtually all the major environmental issues in the United States and also a number of matters of international significance. NRDC has responded to the increasing complexity of these issues by substantially expanding and diversifying its professional staff, which is highly regarded inside and outside the government. NRDC has taken action on nuclear hazards; clean energy; toxic substances; environmental carcinogens; air and water pollution; land use planning; urban transportation; wilderness and wildlife conservation; and many other issues.

Without you, none of the accomplishments about which you will read herein would have been possible.

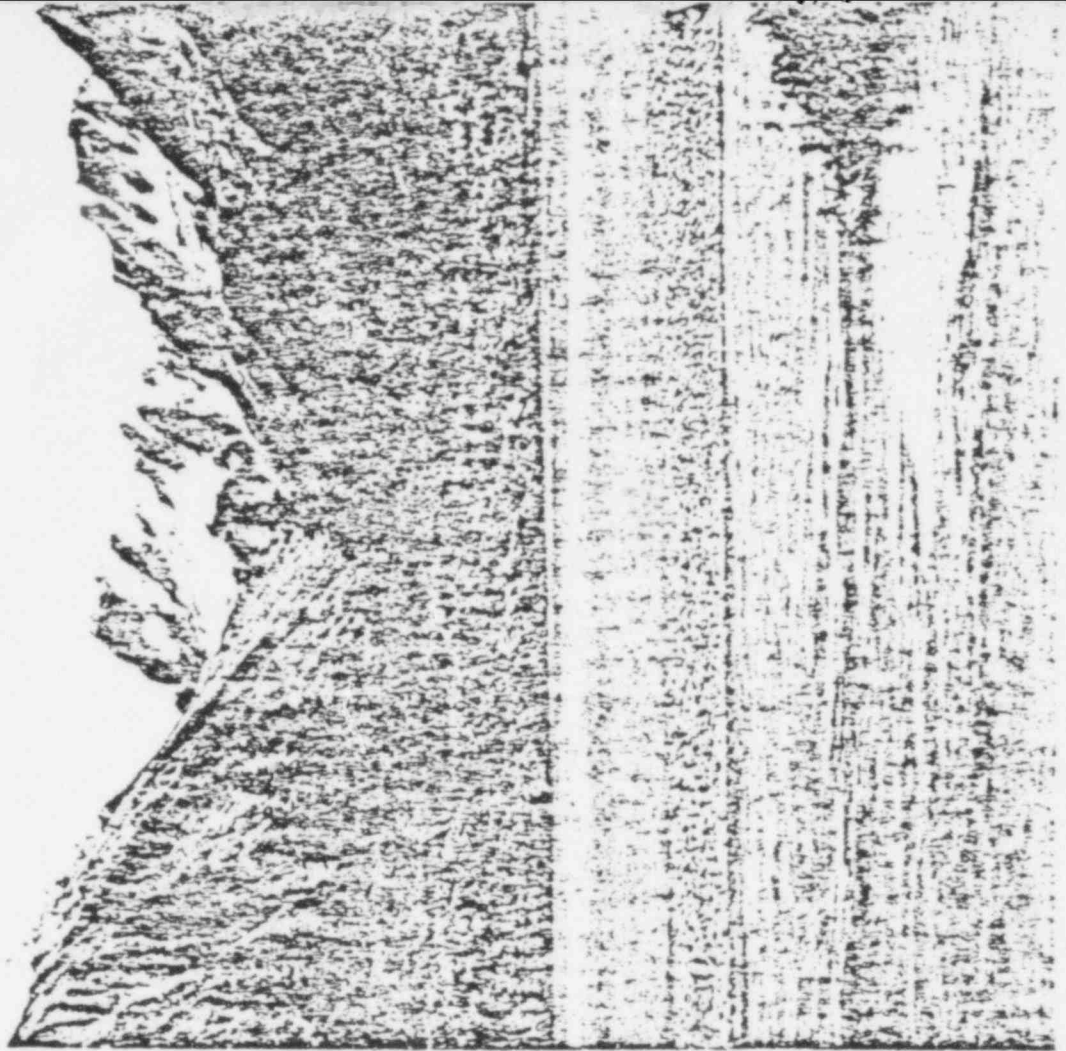
This report summarizes NRDC's work during the past year. As you will read there were several important victories in the federal courts and administrative agencies: in September of last year, we won a firm victory against destructive stripmining practices in *NRDC v. Hughes*. The U.S. Supreme Court's long-awaited opinion in *Vermont Yankee v. NRDC*, which dealt with the issue of nuclear waste disposal and plutonium recycling, was handed down early in 1978.

In another Supreme Court victory, NRDC's six years of legal efforts to have New York City carry out its responsibility to reduce traffic were rewarded. And in May of 1977, the Food and Drug Administration, with the concurrence of other federal agencies, called for a total phasing out of fluorocarbons in aerosol products.

Although NRDC still litigates, our work has increasingly shifted from the courtroom to the Congress and to the bureaucracies where key decisions are made with little or no public oversight or knowledge. With the passage of the Tax Reform Act of 1976, organizations such as NRDC can now spend approximately 20 percent of their time and resources on Congressional lobbying efforts without affecting their tax-exempt status. This means that a small part of your tax-deductible contribution can now be used for lobbying—correcting a long-standing inequity in the tax laws which prevented most environmental organizations from engaging in "attempts to influence legislation" while industries could deduct their lobbying campaigns as necessary

Opposite page: National Park Service—M. Woodbridge Withers

POOR ORIGINAL



business expenses. During 1977/78—as this report points out—our attorneys and scientists lobbied and testified extensively on revisions of the Clean Air and Water Acts, energy policy, transportation priorities, wetlands and wilderness preservation, nuclear proliferation, regulation of toxic chemicals, and federal cancer policy.

One disturbing trend which we began to see in 1977 was a growing reaction against environmental goals. A number of leading periodicals published articles critical of the environmental movement. It is imperative that we meet this adverse reaction head-on. We must convince both the public and its policy makers that clean air and water, energy conservation, the preservation of wilderness, and safe consumer products are compatible with a robust economy, and absolutely essential to our society's wellbeing. Making these arguments, gathering the facts to support them, and turning them into sound national policies may be NRDC's greatest challenge in the coming years. With your continued help, we are ready to meet it.

Sincerely yours,



Stephen P. Duggan
Chairman

The Coastal Zone

The intricate connection between water, sand, fish, marshes and the rest once appeared to be a natural marvel, incorporating a dozen different systems into one that produced, protected and encouraged life. Now this same unity terrifies. The system's essence becomes its threat.

Anne W. Simon
The Thin Edge: Coast & Man in Crisis

Both the Atlantic and Pacific coastlines—four thousand miles of sandy beaches, rocky headlands, twisting inlets and placid marshlands enjoyed by millions of Americans—are threatened by increasingly intense development pressure. Since the passage of the Coastal Zone Management Act of 1972, NRDC has served as an effective voice for conservation interests, backed by the legal capability to make that voice heard.

Safeguards for Offshore Leasing

In 1974, the Department of the Interior announced an accelerated leasing program to develop petroleum resources on the outer continental shelf (OCS). The Department has leased millions of acres in major sales off the coasts of California, Alaska, New Jersey, and New York. NRDC has taken a leading role to ensure that OCS development proceeds with adequate environmental safeguards.

NRDC's initial success in challenging the first Atlantic OCS lease sale (*NRDC v. Secretary of the Interior*) was reversed on appeal. However, the months of proceedings and attendant publicity in-

fluenced the Department of the Interior to adopt new procedures which significantly increase environmental controls over OCS leasing and address many of NRDC's original objections. Most importantly, these include a full-scale environmental assessment after discovery of offshore oil to determine whether and how development should proceed, and Interior's adoption of authority to suspend drilling operations which threaten to cause significant environmental harm.

Review of Coastal Programs

In response to passage of the federal Coastal Zone Management Act, thirty states are developing

long-term management plans for their coastal resources. NRDC is the only national environmental organization reviewing these plans and has been successful in using scientific and legal critiques to urge state planners and federal officials to develop more effective mechanisms for coastal protection. During 1977-78, we participated in the development of eight state programs prior to federal approval. At present NRDC is vigorously defending the coastal plans from broad-scale challenges by the oil companies which threaten to undermine the entire federal coastal zone management program.

Barrier Island Protection

In May of 1977, partly in response to the efforts of NRDC, President Carter ordered the Department of the Interior to develop a protection plan for the over 250 barrier islands of the Atlantic and Gulf coasts. These sandy, low-lying islands serve as buffers between fragile coastal areas and the open ocean, protecting and supporting an intricate web of life which is easily destroyed by unregulated development. NRDC is working closely with Interior to prevent further loss of this unique coastal resource. During the past year NRDC has reviewed the management plans for Fire Island, New York; Cumberland Island, Georgia; and Cape Lookout, North Carolina.



Beach, Beaufort

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The Fight for Cleaner Air

NRDC has been credited by many, including the Environmental Protection Agency (EPA), with keeping America's progress in achieving cleaner air close to the schedule mandated by the Clean Air Act. Since 1971 NRDC has participated in most of the major litigation brought by environmental organizations under the Act, and has ultimately won more than a dozen lawsuits.

Respirable Fine Particulates

NRDC's recent "white paper" summary of the available data on this class of air pollutants represents over two years of research and is an important part of NRDC's educational activities. The study clearly links health and environmental damage to widespread pollution by airborne fine particulates, which, because of their small size, are drawn deep into the lungs and persist in the atmosphere for long periods of time. At present, federal standards tend to regulate only the more easily controlled coarse particulates, ignoring the finer particles. Thus many areas of the country may be in compliance with federal law and yet be harmfully polluted by high levels of fine particles. An NRDC petition to EPA calling for strict regulation of fine particulates was filed in 1978.

The 1977 Clean Air Act Amendments

For the past year, NRDC has been deeply involved in the lengthy legislative consideration of these amendments and was a leader in lobbying for a strong bill.

Among other provisions, the 1977 amendments require that the best pollution control technologies must be applied for all new coal-fired power plants, and that existing high quality air must be protected from deterioration. Also for the first time action is required to protect and improve visibility, and to allocate clean air as a limited natural resource.



Rock's Bottom

POOR ORIGINAL

Northern Great Plains Coal

NRDC legal actions to improve environmental controls over the development of federal coal deposits in Montana, Wyoming, Colorado, the Dakotas, and Utah, met with significant success in 1977. *NRDC v. Hughes*, challenging the adequacy of the Department of the Interior's assessment of the environmental effects of its national coal leasing program, was decided in NRDC's favor, temporarily halting all leasing of federally owned coal. However, NRDC and our co-plaintiffs agreed to modify the court's order, at the Department's request, to permit granting some carefully selected leases while Interior is completing its environmental statement. NRDC's chief concerns are the irreversible damage strip mining would inflict on arid western lands; the questionable benefits of extracting the deposits when 42 billion tons of western coal are already available for mining (national consumption is now about 600 million tons per year); and the irretrievable loss of farm and grazing land which would result.

Grazing

Although livestock grazing is the single most extensive use of the public lands in the eleven western states, the environmental damage it causes has been ignored for decades. Many of the 150 million acres managed by the Bureau of Land Management (BLM) suffer from overgrazing of the native ground cover, causing topsoil erosion, degradation of water quality, and destruction of wildlife habitat. Previous NRDC action has forced the BLM

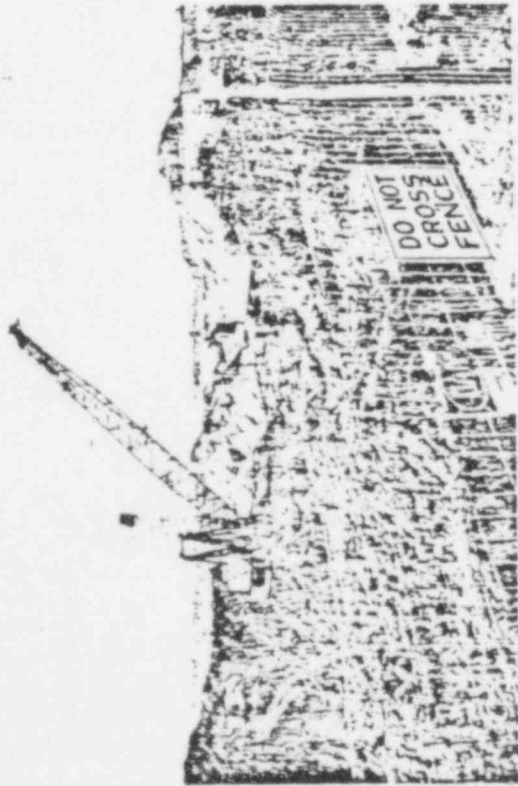


Photo Researchers - Van Becher

Resources Management

Mineral Leasing

In a recent victory for environmentally responsible management of federally owned mineral deposits, the Washington D.C. Court of Appeals supported Interior's right to consider environmental factors in issuing phosphate mining leases in the Osceola National Forest in Florida (*Kerr-McGee v. Andrus*). NRDC successfully argued that the proposed mining would result in extremely severe and widespread environmental damage to the forest. The court's decision reverses a lower court ruling that the Secretary of the Interior had no authority to consider environmental effects in processing lease applications.

to prepare detailed environmental statements on its livestock grazing programs. In April of 1978, after lengthy court proceedings, NRDC successfully opposed a BLM request for an extended delay in completing these statements.

POOR ORIGINAL

Alaska: The Last Frontier

In sheer magnitude, there's never been anything like this fight before, and it's unlikely that there will ever be anything like it again.

Jack Hession, Alaska representative of the Sierra Club

By the end of 1978, Congress will decide the future of 100 million acres of Alaska, America's last great wilderness. At stake are lands as wild, beautiful, and rich as any in the New World 200 years ago.

The key question is, to what extent will development of the state's abundant natural resources be balanced by resource conservation? NRDC is working in support of a reasonable compromise, Congressional bill HR-39, which would protect one-third of the state as parklands, and leave two-thirds free to be developed.

During 1977, NRDC formed the Alaska Law Council, with the Sierra Club and a local Alaskan

Opposite page: National Park Service—M. Woodbridge Williams

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organization, to address the major environmental issues affecting Alaska, from wilderness protection to coastal zone management. This is a logical and significant extension of previous NRDC efforts in the state, including our participation in an ongoing lawsuit to protect Alaskan wolves.

The International Environment

NRDC's international activities have two main objectives: to monitor and influence decisions of United States government agencies and international bodies which affect the quality of the international environment, and to cooperate with foreign environmentalists to help make their work more effective. In addition to the developments highlighted below, NRDC continues to work to halt plans which would turn the unspoiled Micronesian island of Palau into a giant super-tanker facility, and to find better protective measures for endangered species.

Environment and Development

NRDC is working to ensure that environmental protection becomes an integral part of the development assistance provided to third world nations. During 1977, we played a major role in convincing the U.S. Congress to enact an amendment to

the U.S. Foreign Assistance Act, which for the first time authorizes including the funding of natural resources protection as part of the \$1.8 billion U.S. foreign aid program.

In October 1977, NRDC's U.N. representative and staff members helped organize the Mohonk Trust Conference on Environmental Concerns in Development, which brought together representatives of environmental groups and private voluntary agencies which develop and assist projects in the third world. These meetings launched a two-year cooperative effort to encourage environmental protection in developing countries. At the request of the Agency for International Development, NRDC and other groups are producing a guide booklet to be used by development agencies to ensure that field work proceeds with maximum environmental safeguards.

United Nations

NRDC has worked with the United Nations since our accreditation in 1972 for the United Nations Stockholm Conference on the Human Environment. We have achieved consultative status, which allows us greater participation in global conferences and in the United Nations Economic and Social Council. Weekly briefings are held at the U.N. by the Office of Public Information on major world problems involving, among others, the Law of the Sea Conference, World Food Programmes, the Conference on Desertification and Water, worldwide new sources of energy, outer space, natural resources and work of the United Nations Environment Programme (UNEP), with which our representatives work closely.

At the request of Dr. Noel Brown of UNEP, we are developing safeguards for monitoring the use of toxic substances, especially as they effect third world countries. We are also evolving a fellows program to bring interns from developing countries to study our work. One of our staff scientists will chair the Non-Governmental Organizations Committee for the major 1979 United Nations Conference on Science and Technology for Development. We are especially concerned with development and environment as this subject becomes an issue in the new international economic order.



Photo Researcher—Georg Gerster

Nuclear Weapons Proliferation

As the controversy over nuclear power has intensified worldwide, NRDC has expanded its cooperation with environmental organizations in other countries. NRDC was the moving force behind the Salzburg Conference for a Non-Nuclear Future, held in May of 1977 in Salzburg, Austria. The conference brought together over 100 scientists, attorneys, and

activists from 23 nations—the largest international gathering of citizens concerned with the hazards of nuclear energy ever assembled. The extensive media coverage of the conference made clear that there is responsible global concern about the hazards posed by fission energy.

During the past year, NRDC has worked with environmentalists in France, Germany, the United Kingdom, and Japan in efforts to delay commitments to plutonium reprocessing and the breeder reactor. In September 1977, NRDC staff presented testimony at an English proceeding, the Windscale Inquiry, held to evaluate plans for a proposed large-scale reprocessing facility.

Non-Proliferation Act

Congressional passage of the Nuclear Non-Proliferation Act of 1978 marked the end of a three-year debate over nuclear weapons proliferation and exports—a debate in which NRDC actively participated. Through testimony, administrative proceedings, and public education, NRDC and fellow environmental groups helped create the climate which allowed this bill to become law. Many of its provisions calling for more stringent controls over nuclear sales abroad had been recommended earlier by NRDC.

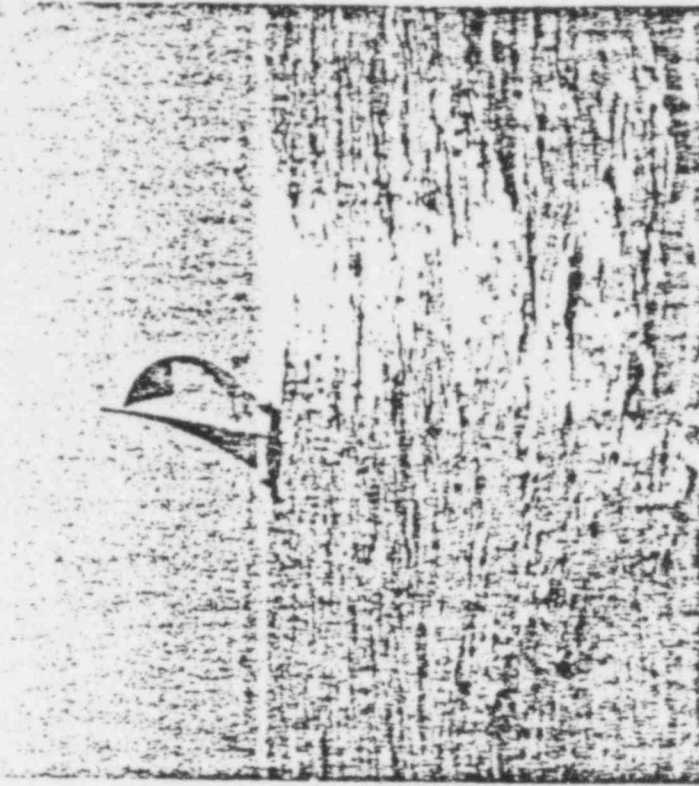
Clean Water

Since the passage of the Clean Water Act in 1972, NRDC has prepared comments and participated in federal rulemaking on virtually all the major water pollution programs. When necessary, we have initiated litigation to insure effective implementation of the Act.

The 1977 Clean Water Act Amendments

During 1977, consideration of Water Act amendments sparked major Congressional debates over setting standards for pollution clean-up; establishing deadlines for compliance with pollution standards; and protecting wetlands and tidal areas. Throughout the proceedings we strongly defended positions established by previous NRDC legal victories, and won the inclusion of significant provisions which strengthen and clarify the entire federal clean water program.

For example, NRDC fought back an effort to destroy the only effective protection that wetlands, swamps, and tidal areas are now afforded, and defeated an attempt to move pollution standard deadlines forward by as much as ten years. NRDC also fought successfully to have toxic water pollutants, those which harm aquatic life and threaten human health, regulated by the Water Act. (Previously only so-called "conventional" pollutants, those which deplete oxygen and cloud the water, have been controlled by the Act.) By providing for a far



Roald Beftrom

broader and more effective toxics control program, these amendments are a dramatic step forward toward safer drinking and recreation waters, cleaner and more productive commercial fisheries, and better protection of people's health.

Energy

NRDC has been instrumental in focusing public attention on some of the most basic questions arising from the energy crisis, especially those concerning nuclear development . . . they are the questions that NRDC has had the courage, skill, and expertise to raise.

John B. Oakes, "Battle for the Future"

Evidence of the seriousness of the energy crisis is all around us: higher prices for heating, electricity, and transportation; growing deficits in the U.S. balance of trade; increasing interest in energy conservation techniques. Unfortunately, our approach to solving the energy crisis is, in NRDC's opinion, dangerously flawed. Our national commitment to huge, inefficient central generating stations as the source of most of our energy and our failure to take measures to conserve energy are threatening the fundamental organization of twentieth-century society. We are draining our energy resources, poisoning our environment, and depleting our reserves of water, all to avoid changing national habits which, according to numerous studies, are exceedingly wasteful. NRDC has been attacking this enormous problem for seven full years through sound technical analyses, lawsuits, legislative testimony, and educational efforts which have forced critical re-examination of our energy priorities. Now, at last, we are beginning to see real changes in federal energy policies.

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Nuclear Wastes—the Supreme Court's Vermont Yankee Decision

Vermont Yankee Nuclear Power Company v. Natural Resources Defense Council, decided by the Supreme Court in early 1978, ends any further question that the issues of nuclear waste disposal and "recycling" of plutonium must be considered in licensing nuclear plants. The Supreme Court returned the case to the Court of Appeals, directing that it determine whether the Nuclear Regulatory Commission could support its contention that there is a solution to the problem of storing lethal radioactive wastes for hundreds of thousands of years while they decay to harmless levels. By remanding the case, the Supreme Court indicated its own serious doubts that long-term nuclear waste disposal methods will be found in the near future.

Nuclear Reprocessing and the Breeder

For the last six years NRDC has taken a leading position in opposing a national commitment to the "plutonium economy." In April 1977, these efforts influenced a reversal of United States policy—a decision by President Carter to abandon indefinitely nuclear reprocessing and development of plutonium breeder reactors.

The Presidential announcement was one of several reasons for the Nuclear Regulatory Commission's December 1977 termination of two proceedings: hearings on nuclear reprocessing; and licensing proceedings for all facilities proposing to reprocess plutonium for nuclear reactor fuel. Together these cancellations have effectively halted all

commercial reprocessing across the country. However, Congressional resistance to this firm stand against plutonium breeders is undermining the President's opposition, and NRDC believes the battle is far from over.



Photo Researchers—Paula Koch

Radiation Exposure

Three years ago NRDC petitioned both the Nuclear Regulatory Commission (NRC) and EPA to make the radiation protection standards for nuclear workers more restrictive. The petition, based on an NRDC scientific report showing that the present allowable exposure levels were over ten times too high, was denied. The NRC never acted. In 1977, additional biological information was made available which supported NRDC's position and EPA has agreed to reconsider its earlier denial. The NRC is also stepping up its efforts to resolve this issue as soon as possible.

Sun Desert Power Plant

California is the first state in the nation to pass legislation requiring the demonstration of successful nuclear waste disposal techniques *before* new atomic-generated plants are built. In proceedings before the California Energy Commission and the state legislature, NRDC's Western office strongly supported this legislation, and during 1977 participated in the siting proceedings for a proposed 2,000 megawatt facility which local authorities sought to exempt from the waste disposal requirements. By denying this exemption, the California Energy Commission upheld the new legislation and effectively defeated the nuclear power plant project.

Environmental Carcinogens

Several hundred new chemical compounds are introduced into use each year. Altogether, the public and the environment are exposed to a total of nearly 100,000 synthetic chemicals, many of which alone or in combination are highly toxic. In just three years, NRDC has won federal regulation for five specific and extremely widespread cancer-causing substances: asbestos, acrylonitrile, polychlorinated biphenyls (PCBs), arsenic, and fluorocarbons (see below).

During 1977, NRDC shifted emphasis from

regulation of individual carcinogens to the development of comprehensive federal programs to control all substances harmful to health and the environment. We believe that this approach will be considerably more effective than any other.

Premarket Testing

The 1976 Toxic Substances Control Act requires the testing of new chemical substances *before* they are introduced into the environment, a major step for better health and environmental protection. During 1977 and early 1978, NRDC and the Conservation Foundation organized a series of conferences and meetings on premarket testing standards for chemical substances. Representatives of public-interest organizations, academia, and the nation's largest chemical-producing industries attended the conferences. This unprecedented cooperative effort resulted in general agreements on a technically feasible testing approach which is being submitted formally to EPA.

Federal Cancer Policy

The Occupational Safety & Health Administration (OSHA) is the first federal agency to develop a comprehensive "cancer policy," which is a seminal effort to deal with carcinogenic substances on a generic basis and will serve as a precedent for the cancer policies of other federal agencies. NRDC's formal comments on the policy were submitted to OSHA in February of 1978, and examined in detail every aspect of the agency's proposed regulations.

In general, NRDC supports OSHA's proposal to expedite the regulation of individual substances by resolving scientific issues common to the control

of all carcinogens in one proceeding, and forbidding re litigation on a substance-by-substance basis.

However, we are participating in the hearings on OSHA's policy to urge adoption of improvements which we believe necessary to make the program truly effective.

Fluorocarbons Banned

NRDC's pioneering efforts to eliminate the threat posed to the biosphere by fluorocarbon aerosol gases have been completely successful. In May 1977 the Food & Drug Administration (FDA) formally granted a 1976 NRDC petition and, with the concurrence of the Consumer Product Safety Commission and EPA, called for a complete phasing out of fluorocarbons in aerosol products. We expect, as well, that other NRDC actions will result in regulation of these compounds in all manufactured products.

Public Transportation

In August of 1977, six years of NRDC efforts to induce regional officials to implement an environmentally sound transportation control plan for New York City were rewarded by a U.S. Supreme Court victory. Mr. Justice Marshall rejected a city plea for delay and ordered negotiations between city, state, and environmental spokesmen. Thirteen specific measures designed to reduce traffic congestion and

improve public transportation were part of the court order, some, such as establishing express bus lanes and reducing subway noise, are already being implemented.

Throughout these lengthy proceedings, NRDC's reasonable approach and willingness to negotiate promoted a new cooperative relationship between environmentalists and city and state administrators which has cut through bureaucratic red tape and produced results.

If these negotiated strategies are successful in the tristate region, which depends more on mass transit than any other part of the country, they may serve as models for urban areas facing the same problems: traffic congestion, air pollution, deteriorating public transportation, and loss of business from inflated shipping costs and poor commuter service.

Publications

In the eight years since our founding, NRDC has been the source of well over one hundred publications, which include articles, reports, technical papers, and books on environmental issues. During 1977-78 we published, among others, the following studies.

How Safe Are Our Children's Art Materials?
An Investigative Report. John Repaci, Marcia Tompkins. 150 pp. \$7.50.

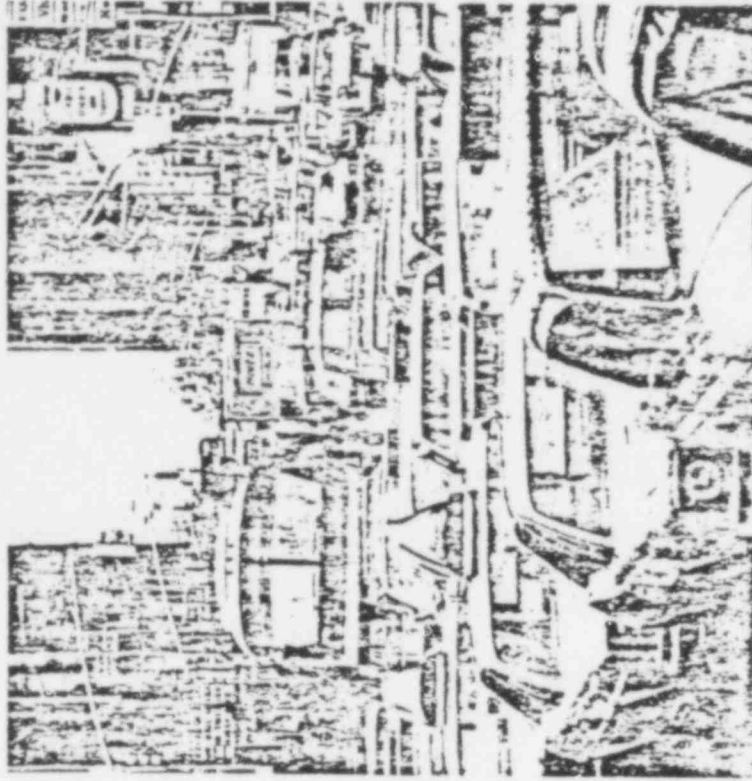


Photo Researchers—Jan Lukas

An Assessment of New York City's Transportation Service and its Impact on Business and Health. Eric Goldstein, Editor. July 1977. 132 pp. \$5.00.

Airborne Fine Particulates: The Urgent Need for Control. A white paper by Frederica Perera, A. Karim Ahmed, Richard Ayres, Karen Massey, and David Schoenbrod. November 1977. 60 pp. \$3.00.

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NRDC Docket: A Summary of Litigation, Administrative Proceedings and Other Matters Relating to the Protection of the Environment in which NRDC has Taken an Active Role. Edited by Marcia Cleveland, Helene Kendler and Marcia Tompkins. Fall 1977. \$2.50

Proliferation Resistant Nuclear Power Technologies: Preferred Alternatives to the Plutonium Breeder. Thomas B. Cochran, Russell E. Train, Frank von Hippel, Robert H. Williams. April 6, 1977. 48 pp. \$4.00.

Nuclear Weapon Proliferation and Safeguards: Testimony at the Hearings at Windscale, England. Thomas B. Cochran. September 1977. 26 pp. \$2.00.

The Effects of Low Level Lead Exposure: A Study Published to Provide Information on the Environmental Protection Agency's Proposed National Ambient Air Standard for Airborne Lead. Herbert L. Needleman, M.D. and Sergio Piomelli, M.D., in cooperation with American Lung Association. April 1978. 45 pp. \$2.00.

A complete list of NRDC publications is available from the New York office.

Financial Statement

Consolidated Statement of Income and Expenses Year Ended December 31, 1977

(Pre-audited figures*)

<i>Income</i>	
Foundations	\$1,433,124
Contributions	1,007,998
Special Events	10,315
Interest	21,185
Other, Including revenue from publications	17,437
TOTAL	\$2,490,059
<i>Expenses</i>	
Environmental litigation	\$1,324,636
Scientific support	170,915
Public education	135,973
Intern program	30,769
Lobbying	94,841
Management and general	328,300
Fund Raising	429,488
TOTAL	\$2,514,922
Excess (deficit)	\$ (24,863)

* Audited figures available July 1, 1978

Membership

Our citizen constituency is a critical factor in making NRDC a powerful force for environmental protection. The concern and support of 37,500 NRDC members is what gives real meaning to the concept of public-interest law. We wish, once again, to thank all of the members, foundations, and fellow conservation organizations whose support has made our work possible.

All contributions are tax-deductible and NRDC members receive:

The NRDC *Newsletter*, a bimonthly source of environmental information.

Regular progress reports on NRDC's work and bulletins on important new issues.

Discounts on NRDC's growing list of publications.

Bequests

Bequests enable contributors to perpetuate their concern for the environment through the Natural Resources Defense Council. You or your attorney may obtain additional information from our New York office.

The annual report is available from the New York State Board of Social Welfare, Albany, New York, 12242, or from our office.

Member Organizations

Admission to the New York State Board of Social Welfare, Albany, New York, 12242, or from our office.

POOR ORIGINAL

NRDC

newsletter

WRITER and EDITOR
Marc Reisner

NATURAL RESOURCES DEFENSE COUNCIL, INC.

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SEPTEMBER/DECEMBER 1978

THE END OF THE WILDERNESS

The Future of our National Forests

"Let us improve our opportunities, then, before the evil days come."
—Henry David Thoreau

In the beginning, there was a forest. It began where the North American continent rises out of the Atlantic Ocean, and it marched westward to the plains. It reached from northernmost Maine to Florida, from Cape Cod to Lake Superior, from thickly wooded Manhattan Island to beyond the Mississippi River. It was a forest the size of Europe, a dark, undulating carpet of green covering half a continent, broken only by isolated grasslands and swamps. A squirrel could have gone from what is now Maine to what is now Missouri through the treetops, taking an occasional swim. It was an ancient, predominantly mixed hardwood forest with giant trees: oaks and tulip poplars twenty feet around, basswood, beech, maple, chestnut, cottonwood, white and red pine, fir, elm, mulberry, plum, wild cherry, willow, poplar, sycamore, crabapple, mountain ash.

The first settlers from the Old World had never seen such a forest; used as they were to the manicured gardens and civilized woods of Europe, it was probably beyond their powers of imagination. When they approached the American continent in their tiny ships and saw a wall of wilderness standing in front of them, they were dismayed. William Bradford, leader of the Puritans, wrote in his journal that he had stepped off the Mayflower into "a hideous and desolate wilderness." Indeed, the variety and intensity of descriptions used to portray the forest demonstrate the terror and loathing with which the settlers regarded it. To them, it was a "howling" wilderness, a "screaming" wilderness, an "unhallowed" wilderness, a "dismal" wilderness,

and worse. It was, wrote a horrified Cotton Mather, a wilderness in which "the rabid and howling Wolves would make . . . Havock among you, and not leave the bones until the morning."

A wilderness such as this existed only for one purpose: to be "conquered," "subdued," and "vanquished." Had not Genesis given man dominion over the Earth; had it not instructed him to "increase and multiply, replenish the earth and subdue it"? "Why remain in England," asked John Winthrop plaintively, while trying to recruit a "pioneer army" to civilize the New World, "and suffer a whole Continent . . . to lie waste without any improvement?"

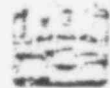
Into such an environment, the American timber industry was born.

In the early days, the timber industry, such as it was, consisted of settlers going into the forests to clear future farmland and cut trees for their log cabins and primitive barns. As towns developed, however, a commercial lumber industry quickly grew with them, and forests were felled for houses, furniture, firewood, shipbuilding, bridges, fenceposts. The sounds of the axe and saw became ubiquitous; the woods were infinite, and they were giving birth to a new civilization.

The first sawmills were water-powered and were built along rivers; the log drivers would float logs—tens of thousands, millions of logs—downriver during the heavy spring run-off. In the early 1800s, the circular saw and the steam-powered sawmill were invented, allowing timber to be milled as fast as it could be cut. Sometimes tree-felling

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The Story of America's Forests



Chopping Down a Continent



Squandering Trees and Taxes: the Forest Service at Work



Brave New Forests and the American Wilderness

seemed too slow a way to clear the continent, and torches were set to the forests. On occasion, state militias had to be mustered to protect them.

It all went very quickly. Before the middle of the nineteenth century, Vermont, the Green Mountain State, was green with grass rather than trees; the state had been 80 percent deforested, and sheep were grazing everywhere. (Ironical—the balance between grass and trees in Vermont had been exactly reversed a little over a century later. The removal of tariffs on imported wool in the mid-nineteenth century drove the New England sheep farmers into bankruptcy, and they moved into the Midwest. With the fields abandoned, the patient forests returned. Today the state is about 80 percent forested.)

The Adirondack forests of northern New York State began to fall in the early nineteenth century; they were transformed into potash or went into the charcoal kilns that sprang up to feed the forges of America's first major iron industry along the Hudson River. The industry reached its zenith just before the Civil War, then declined rapidly as the rich and plentiful ores of the Mesabi Range in Minnesota began to come through the Sault St. Marie Locks, which were opened in 1856, to feed the developing steel centers on the shores of the lower Great Lakes. The demise of the Hudson River steel industry occurred before the Adirondack forests had been levelled, and the wilderness that remained in northern New York State became a powerful source of inspiration for the emerging forest protection movement at the end of the nineteenth century.

The southeastern forests were set upon early on by the immigrants, and the fertile delta and piedmont regions were soon cleared for expansive farms and plantations. The early history of the central Mississippi valley is a story of harvests from newly settled areas hoisted onto log rafts, which were floated down the tributaries of the Mississippi and then the great river itself to New Orleans, where the produce was delivered, the rafts taken apart, and the logs sold. Then everyone hiked back north to their homes, where the growing and reaping, the chopping and felling, the raft assembling and loading began all over again.

By the 1870s, loggers had cut their way across most of New England and much of the Middle West. In the late nineteenth century they had leapfrogged the plains and were felling the towering conifers of the Rockies. First Bangor, Maine; then Albany, New York; then Williamsport, Pennsylvania; then Saginaw, Michigan; then Eureka, California; then Portland, Oregon; each was, in succession, the "Timber Capital of the World." A vast mythology developed around the logger, stocked with tales of Paul Bunyan, of hundred-mile-per-hour flume rides, of whole forests felled in an afternoon. There are, to this day, only three truly American folk heroes: the cowboy, the mountain man, and the lumberjack.

During the whole period, the United States government and the states themselves did all that they could to encourage the levelling of the American wilderness. Under the Homestead Act, the Timber Culture Act, and the Swamp and Overflow Act, tens of millions of acres were sold or given away by the federal government with few restrictions. The opportunities for committing fraud were sensational, and they were seized upon; huge timber fortunes were amassed overnight. The railroads were ceded great swaths of the continent, and quickly became the largest timber owners in the west (the Southern Pacific railroad is still the biggest timber owner in California). In North Carolina in the 1800s, virgin hardwood forests sold for a dime an acre; in Maine and Pennsylvania, the rate was twelve and one-half cents. At those prices, giant oaks worth hundreds of dollars as lumber today could be had for less than a penny. Trees came close to being free goods.

In the early days, the timber companies followed a simple forest policy; it was called cut and run. Whole mountains, whole mountain ranges, were denuded and then abandoned. Reforestation was unheard of. Streams filled up with debris, landslides rumbled down the mountainsides, and soil erosion was out of control. Nevertheless, the idea of regulation—not to mention preservation—of some of the remaining forests was considered the most dangerous kind of heresy by the timber companies.

If one were to select a year when all of this began to change, then one would probably choose 1877, the year when President Rutherford Hayes ap-

pointed Carl Schurz to be his Secretary of the Interior.

Schurz had been a student revolutionary in mid-century Germany, and, after arriving in America, led a varied career as a heroic Civil War general on the Union side, a progressive senator from Wisconsin, and a writer of high-minded and incendiary editorials for the *New York Evening Post*, the *Nation*, and *Harper's Weekly*. An abolitionist, and one of the first tiny band of American conservationists, Schurz was a moralistic and passionate man whose favorite pleasures were songfests at the piano and walks in the deep woods. The devastation of the American forests outraged him greatly, particularly since it violated so completely the ethic of forest husbandry which he had brought over with him from Europe.

As Secretary of the Interior, one of Schurz's first actions was to order an extensive study of forest degradation. When word of this drifted over to the Capitol, the Congress exploded—

This issue was written in collaboration with Tom Barlow of NRDC's Washington office. A former banker, and a long-time gadfly of the Army Corps of Engineers and the Soil Conservation Service, he has been investigating the timber management policies of the Forest Service for the past three years, and has done pioneering work on National Forest timber pricing.

For further reference, NRDC has published a number of publications on timber management policies. They are:

Forest Scoring or Forest Killing?

If You See a Stockholder in a Common-Ownership Forest Land, the Forest Service Can Be Starting You.

The Forest Service is Under-selling the Private Tree Farmer... and this Hurts Farmer Income.

How the Corps' '404' Permit Program Can Help the Small Forest and Woodlot Owner.

The entire series is available from NRDC's Washington office for \$1.00.

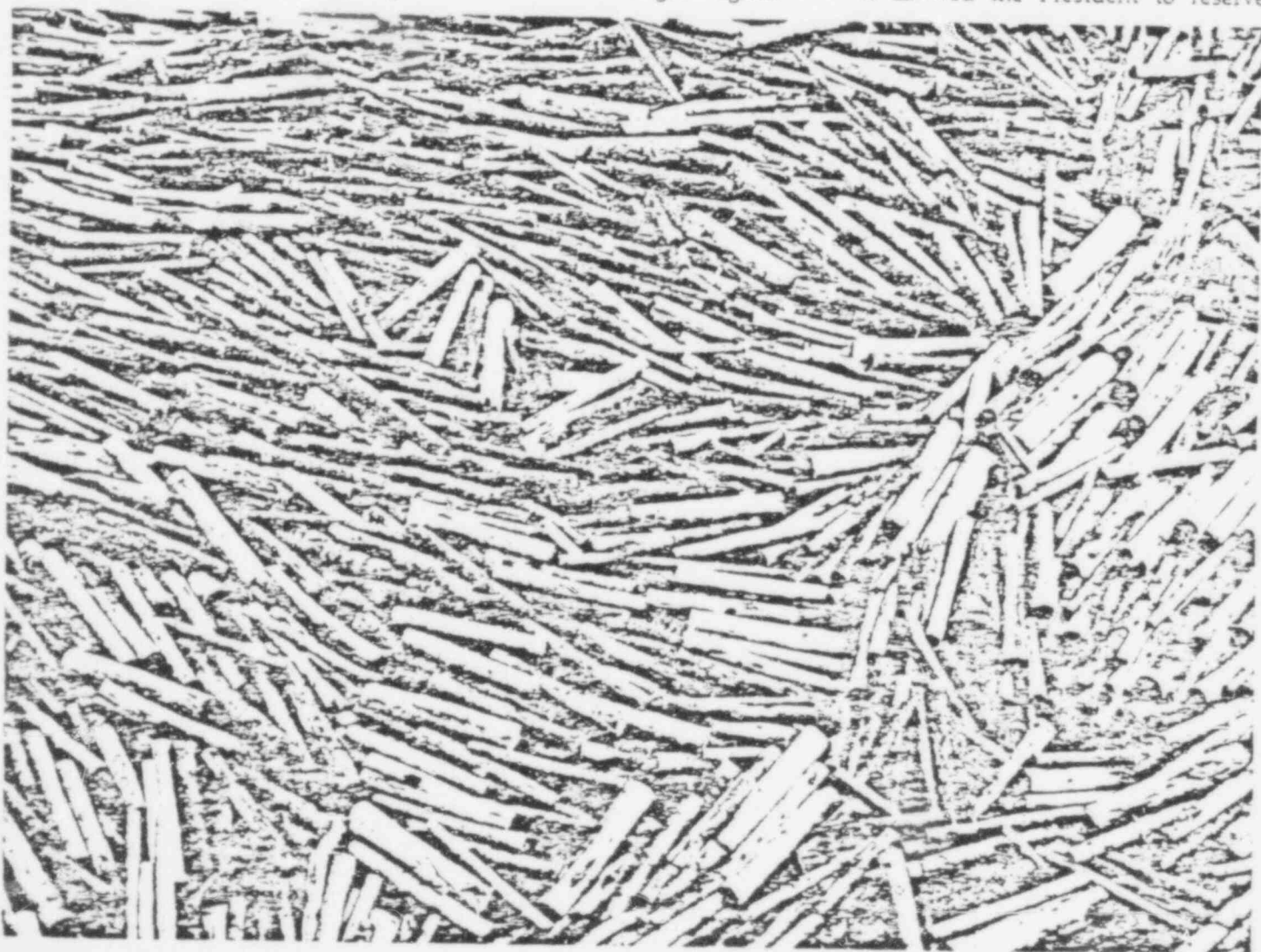
POOR ORIGINAL

James G. Blaine, the Senator from Maine, bellowed that Schurz was an "outrageous and un-American" person who wanted to introduce "Prussian methods" into American society—but the Secretary persisted.

The Interior Department report, when completed, was devastating; it confirmed, in Schurz's words, that the timber industry was "not merely stealing trees, but whole forests." In one of several messages to the Congress concerning timber abuse, he waxed eloquent and indignant: "I deem it my duty again to invite attention to the extensive depredation committed on the timberlands of the United States, and the rapid and indiscriminate destruction of our forests, especially in the South and in the States and territories of the West. I [have] referred to the warning example furnished by other parts of the world, where the disappearance of the forests had been followed by the most deplorable consequences: the drying up of springs;

the irregularity of water supply in navigable rivers; the frequency of destructive freshets and inundations; the transformation of once productive and flourishing agricultural districts into barren wastes, almost uninhabitable to man. I showed that the same results would inevitably befall certain parts of this country if so short-sighted and reckless a practice be persisted in as is now prevailing. I set forth as a universally acknowledged fact that especially in our mountainous regions the stripping of the slopes of their timber would be an irreparable injury, inasmuch as the rainfall and the water from melting snows wash down the soil, transform brooks and rivulets running regularly while the forests stand, into raging torrents at certain seasons, and sweeping masses of gravel and loose rock into the valleys below, apt to render them incapable of cultivation, while on the mountainsides the forests once destroyed would in most cases never grow again."

Though Schurz and his sympathizers in government had little success with the legislators—about one hundred and fifty forestry bills introduced in the last quarter of the nineteenth century were brushed away by the timber-dominated Congress like so many gnats—the conservationists' anger slowly came to be shared by the public, which was being roused by the florid oratory and writing of John Muir and the dyspeptic rumblings of Henry Thoreau. In the late nineteenth century, a forest protection movement began to grow, comprised mainly of aristocrats, educators, middle class gentry, and government servants. In 1881, a federal Division of Forestry was created, with Franklin Hough, a physician and naturalist from New York State, as its first chief. Its creation was applauded by the conservationists, even though the agency was essentially powerless. Their first real victory came in 1891, when the Reservation Act was passed. It allowed the President to reserve



Robert de Gasi Freelance Photographers Guild

land from the public domain as wilderness, off limits to loggers and miners. The Grand Canyon, the slopes of Pikes Peak, and the Yellowstone area in Wyoming were among the first lands to be put into the reserve system. However, Congress still refused to pass legislation to employ wise forest management practices on federal timberland.

Finally, in 1896, at the direction of President Grover Cleveland and with the concurrence of Congress, a committee of the National Academy of Sciences, after conducting a thorough study of the federal forest domain, recommended that an additional twenty-one million acres be included in the forest reserves. On February 22, 1897, an outgoing President Grover Cleveland, acting upon the Academy's recommendations and on his authority under the Reservations Act, moved twenty-one million acres from the public domain into the reservation system. The outcry was immediate and thunderous. Whole towns, ranches, and mines, it turned out, were located and functioning vigorously within the designated areas, even though title to the land was held by the federal government. When President William McKinley refused to rescind Cleveland's order, saying that he was not about to return protected land to the ravages of the timber industry, Congress quickly passed legislation opening the reservations to logging again. But McKinley threatened to veto any legislation that did not contain reforms, so, in the end, the forest conservationists had won the day. After twenty frustrating years of trying to get Congress to enact legislation requiring responsible forest management on public timberlands, they succeeded in having carefully prescribed forestry practices included in the legislation. The measure became known as the Organic Act of 1897.

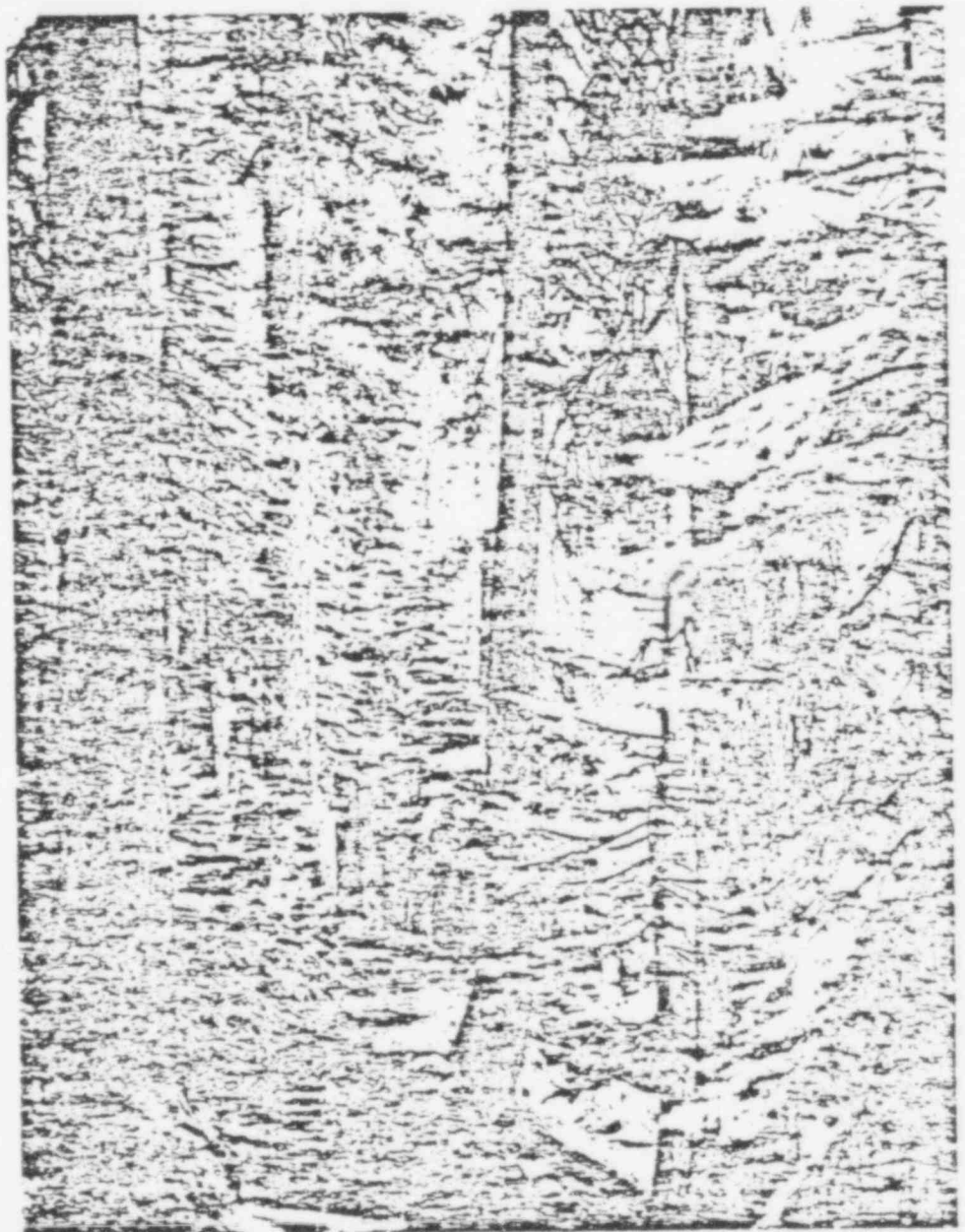
The first person to set the administrative tone of federal forest management was Gifford Pinchot. The agency he headed, which ultimately became the U.S. Forest Service, was brought into being at the turn of the century. Pinchot was an American aristocrat who had studied forestry in Europe; today he is often regarded as America's first genuine forester. He was also a close friend of the President under whom he served, Theodore Roosevelt. Both were

conservationists, and both were astute politicians. Together they managed to add nearly a hundred million acres to the timber reserve system, mostly in the Rocky Mountains and the Pacific Northwest. In the process they snatched away all of this land from the Interior Department—which was filled with corrupt political appointees and dominated by western logging and mining interests—and put the forests under the jurisdiction of the Department of Agriculture.

The Forest Service in its early days was bursting with idealism and esprit de corps. It was a swash-buckling outfit. Pinchot staffed his agency with people who believed, as he did, that they were "engaged in a

great and necessary undertaking in which the whole future of their country was at stake." Pinchot's idea of forestry was essentially utilitarian; a preservationist like John Muir (who had started out, ironically, as an inventive sawmill engineer) he was not. However, there was little demand in those days for timber from the National Forests—indeed, the timber industry was so busy cutting the trees off its own lands that it didn't want any competition from the federal government—so the Forest Service occupied itself fighting fires, reseeding, conducting silvicultural experiments, and educating private timber owners into the ways of sound forestry.

Then came World War II and the



Gene Ahrens-Freeland Photographic Guild

An old growth forest in Rocky Mountain National Park, Colorado.

POOR ORIGINAL

POOR ORIGINAL

Briefly Noted

housing boom that followed it. From that point on, the consumption of timber roared upward, as affluence and a paperwork society generated insatiable demands on America's forests. The timber industry's lands, which had been badly overcut, couldn't keep up with the demand, so the industry looked to the National Forests. Subtly, quietly—but quickly—the Forest Service began to change from a custodial agency into one which acted like a giant timber corporation. Haul road mileage in the National Forests went up and up, from 36,000 miles in 1940 to 106,000 miles in 1970. Annual timber sale volume jumped: 1.5 billion board feet (1951), 8.3 billion board feet (1961), 11.5 billion board feet (1971). The percentage of the nation's timber cut on the National Forests climbed steadily, from a tiny fraction before World War II to 22 percent in 1970s.

By the late 1950s, a number of conservationists, some professional foresters, and a few members of Congress had become deeply concerned that timber cutting on the National Forests was getting rapacious; moreover, the presence of good forest managers in the Forest Service hadn't stopped the depredations from occurring. Management of the National Forests had been left by various laws—actually by the absence of laws—almost entirely to the discretion of the Forest Service bureaucracy in Washington and the regional foresters throughout the nation. What the annual allowable cut should be, where timber could be cut and by what methods, where the logging roads should go, what protection would be provided for fish and wildlife, what consideration would be given to people using the forests for recreation—making such decisions was solely the prerogative of remote administrators. With the timber industry pushing hard for more logging at the expense of other forest values, the foresters were caught in a crucible. Those within the agency who were happy to serve the interests of the timber companies seemed to be gaining influence over those who held to the principles of wise forest management.

The answer—or so it was thought—to resolving the conflict between timber demand and sound forestry was the passage of the Multi-

New Board Members

NRDC would like to welcome three people who have recently joined our Board of Trustees:

Adrian DeWind, a partner in the New York law firm of Paul, Weiss, Rifkind, Wharton, and Garrison, has just completed a term as President of the New York City Bar Association.

Joan Davidson is a former Chairperson of the New York State Council on the Arts, and is President of the J. M. Kaplan Fund.

John Oakes has had a long and distinguished career as a journalist and New York Times editor, has received a number of awards in recognition of his work as a conservationist, and is the author of *The Edge of Freedom* (1961).

New Staff Members

Trent Orr, a graduate of Harvard Law School, and most recently a fellow at the Los Angeles Center for Law in the Public Interest, has joined our Palo Alto legal staff and will be working on the Forestry Project.

Georgia Yuan, who teaches environmental geology at San Francisco State University, has become a consulting geologist with the Palo Alto office. She is working on radioactive waste disposal with Staff Scientist Terry Lash.

An Ailing Friend

Alfred Forsyth, a Sierra Club leader and longtime friend of NRDC, is ill. We extend to him our wishes for a speedy recovery. Al may be written to at: P. O. Box Drawer 65, Pecos, New Mexico 87552.

ple Use-Sustained Yield Act in 1960. The Act, which is only a few paragraphs long, simply decrees that the National Forests shall be managed for "outdoor recreation, range, timber, watershed, and wildlife and fish purposes."

As it turned out, the Multiple Use-Sustained Yield Act was all gums and no teeth, and it had no appreciable effect on the Forest Service's timber management policies, which were aimed more and more at getting the maximum possible volumes of timber out of the National Forests. The agency had come to see itself as timber supplier not just to the nation, but to the world. In the 1950s and early 1960s, the Service let several fifty-year contracts to sell enormous quantities of timber from the great virgin forests of southeast Alaska. Under the contracts, a considerable portion of the standing timber inventory of the Tongass National Forest—the largest and one of the most beautiful of America's rapidly dwindling virgin forests, with a stunning diversity of wild animals—would be liquidated within about half a century and sold to Japan.

In the Tongass Forest and elsewhere, the Forest Service began in the

1960s to exhibit what Dr. David L. Smith, one of the nation's most eminent silviculturists, has described as a "spasm of zeal for clearcutting." Although it is a widely accepted silvicultural technique, clearcutting often leaves an aesthetic horror, and, if improperly carried out—on too steep slopes, for example, or on highly erodible soil—can cause lasting ecological damage to the forest. It can be particularly detrimental to wildlife populations and fisheries. In the 1960s, the Forest Service began allowing single clearcuts of hundreds of acres or more in some of the western forests; moreover, it permitted heavy clearcutting in the Monongahela National Forest in West Virginia, a hardwood forest which, according to a substantial number of professional foresters, should be harvested primarily through selective cutting or small patch clearcutting.

By the late 1960s, the Forest Service was under attack from environmental organizations, outdoor groups, local citizens and politicians, members of Congress, and even some of its own foresters. Both of West Virginia's senators, Jennings Randolph and Robert Byrd, were complaining loudly about the Monon-

gahela clearcutting. They got terse replies from the acting forest supervisor, and the clearcutting continued. When the West Virginia legislature called for a study of management practices on the Monongahela, the answer was the same. The Forest Service had become arrogant.

Finally, in the 1970s, the Forest Service was hit by a series of stunning blows from which it has not yet been able to recover.

The first landed in the Bitterroot National Forest in Montana. The forest had been the scene of some particularly heavy clearcutting in the 1960s, which provoked a series of savagely critical articles in the *Missoulan*, one of Montana's largest newspapers and an angry chorus of protest from inside and outside the state. In 1969, Regional Forester Neal Rahm, trying to

be done with the issue, appointed an agency task force to conduct an "impartial and penetrating analysis of management practices on the Bitterroot National Forest." The report came out in April of 1970. No one in the Service was really prepared for its findings. "The Task Force believes," it said, "that clearcutting has been overused in [the Bitterroot] in recent years. In many cases, esthetics has [sic] received too little consideration. . . .

[A] preoccupation with timber management objectives—all the way from meeting allowable cut goals to efficient establishment of regeneration—has resulted in clearcutting and planting on some areas that could have been partially cut."

Six months later, the other shoe dropped. A second Bitterroot study group chaired by Dr. Arnold Bolle, dean of the forestry school at the University of Montana, reported its own

conclusions. "Multiple Use management," it said, "does not exist as the governing principle in the Bitterroot National Forest." The Bolle Report was especially damaging to the Forest Service because it went well beyond mere aesthetics. "[T]he rate and methods of cutting [in the Bitterroot]," it concluded, "are difficult to defend on either environmental or long-term economic grounds." (Emphasis added.)

The next blow struck in Alaska.

In 1970, the Sierra Club filed suit against the Forest Service over the largest of several timber sales in the Tongass National Forest in southeast Alaska, a long sliver of mountainous coastline which contains much of the nation's remaining virgin timber. In the late 1960s, the Service had signed a contract with one company, Champion International, for the sale of 8.75 billion board feet of timber, which was to be logged on

POOR ORIGINAL



Silver Bay near Sitka in the Tongass National Forest in Alaska.

Norbert Mashev Freelance Photographers Guild

over a million acres of the Tongass during a fifty-year period. It was the largest timber sale in United States history.


Even though contracts in still-virgin forests were being let by the Forest Service throughout the Pacific Northwest, there was a special poignancy to the Tongass issue. Southeast Alaska is one of the few places remaining in the world where one can see what the earth must have looked like a million years ago. The hand of man has hardly touched it. There are a couple of small cities, Juneau and Ketchikan, and some scattered towns and villages, but virtually no roads. The Tongass Forest itself is a vast coastal rainforest of awesome Sitka spruce and hemlock, providing splendid refuge for wildlife; it is a wilderness at once soft and rugged with its great wooded islands, magnificent fiords, and snowy mountains rearing up from the sea. The streams run thick with salmon, bears are far more numerous than people, and the giant conifers growing along the coast, seen from offshore, are white-dotted with the heads of nesting eagles. Whales bask and feed in the bays. If one were to accept the principle that some places on earth should be left absolutely alone, the Tongass would be among the first to qualify.

The Forest Service, of course, didn't agree; it saw the forest as a gigantic storehouse of "overmature" timber waiting to be logged and shipped to Japan. The Sierra Club challenged the sale as a violation of the Multiple Use-Sustained Yield Act. The Forest Service won the first round of the lawsuit, in the district court, and the Sierra Club was represented on appeal by NRDC attorney Angus Macbeth. After oral argument in the court of appeals had been heard, there was an astonishing development. Champion-International released a report on the effects of the timber contract—a report which it had commissioned to refute critics who charged that the logging would be devastating to wildlife. The report itself turned out to be devastating—to the Forest Service. It said, in effect, that the Tongass contract violated every multiple use principle known to modern forestry, and would play havoc with the ecology of a large section of the Forest. The report was written by Dr. Starker Leopold, an internationally recognized University

of California zoologist. On the basis of the study, NRDC's attorneys got the case remanded to the district court, where it sat until Champion's Japanese buyer, the Kanzaki Paper company, pulled out of the deal and the whole contract fell to pieces.

The roadless area case was next. In June of 1972, the Sierra Club, NRDC, and other conservation groups took the Forest Service to court over its failure to conduct a proper inventory of the sixty million acres of roadless area in the National Forests. The inventory was required under the Wilderness Act of 1964, which established the Wilderness System, and it was intended to identify all the remaining areas in the National Forests which might qualify for inclusion in the system. The Forest Service had given every indication that it was not particularly anxious to enlarge the ten-million-acre Wilderness System. The regional foresters had delayed carrying out the roadless area review for over three years, following the issuing of guidelines to conduct the review in 1967. Finally, an order went out from Forest Service headquarters to complete it—within just ten months, and during the wintertime, when most of the areas to be studied were deep in snow.

In January of 1973, newly appointed Chief Forester John McGuire finally released the Service's recommendations. They called for the inclusion of only eleven million more acres—about one-fifth of the total area which had wilderness qualities—in the Wilderness System. Only 45,000 acres, an area about three times the size of Manhattan, were in National Forests east of the Rockies.

 Conservationists immediately pored over the recommendations, and learned some interesting facts. Areas with the slightest traces of human visitation—for example, faint parallel tracks left long ago by a wagon—were often excluded. The Wilderness Act, however, defines wilderness as land where "the imprint of man's work [is] substantially unnoticeable" (emphasis added). Less than a third of the recommended areas were forested, which prompted the derisive term "wilderness-on-the-rocks." The Forest Service had also failed to prepare any environmental impact statements on its inclusions and exclusions.

All of these issues were raised in the Sierra Club lawsuit, and the court immediately issued a temporary injunction against any development on the lands in question. Before the case came to trial, the Chief of the Forest Service had reversed his agency's policy and ordered the preparation of environmental impact statements before the construction of roads could take place. The roadless area battle has simmered for several years now, and is about to boil over—a matter which will be discussed further on.

Meanwhile, timber management reformers were making headway in other forums.

The public's outrage over clearcutting had reached such a crescendo in the late 1960s and early 1970s that Congress was finally moved to action. A subcommittee of the Senate Interior Committee, chaired by Senator Frank Church of Idaho, held hearings to investigate clearcutting practices. Citizen groups from across the nation sent representatives to Washington to testify about the destruction of forest resources that Forest Service clearcutting programs were causing. The timber industry fought back hard, arguing that clearcutting was a legitimate and responsible harvest practice. Even though the industry was sufficiently powerful to prevent clearcutting reform legislation from moving through Congress, the subcommittee did suggest guidelines to restrain clearcutting abuses, which the Forest Service, despite intense industry opposition, began to try to implement.

The next blow by conservationists hit the timber industry especially hard; it was even secretly cheered from within the Forest Service. In 1973, word came down from the Nixon Administration that the proposed timber sale volume for 1974 was too low and should be increased by a billion board feet. The Forest Service leadership dutifully complied, sending out instructions to its Regional Foresters to up the cut. Within the Forest Service, however, there was unhappiness, because certain areas would have to be heavily overcut; some officials privately referred to the order as the "super-sell" program. NRDC immediately slapped the Administration with a lawsuit. The super-sell program, we said, violated the National Environmental Policy Act. The district court quickly agreed.

POOR ORIGINAL

NRDC News

Wastes Make Haste

Later this year (or early next year) the President will make an important policy statement on radioactive waste management and disposal. The background information for this statement is being gathered by the President's Interagency Review Group on Nuclear Waste Management (IRG). The IRG's draft report and six subgroup reports were released for public comment and review in October. The staff of NRDC's Radioactive Waste Project in Palo Alto prepared an analysis of these reports to aid interested citizens. The analysis is available from: Project on Radioactive Waste, NRDC, 2545 Yale St., Palo Alto, CA 94306.

A major issue raised, but not adequately discussed, by the IRG Report is whether nuclear power development would continue unabated while no repository has been built to dispose of wastes. NRDC commented that further creation of wastes is unwarranted in the absence of satisfactory progress in protecting the public against the very long-term hazards posed by these wastes. The IRG also discussed the acceleration of the EPA schedule for setting standards on allowable radiation releases. We view acceleration as desirable, but only if sufficient funds and public input are provided to do an adequate job. The IRG Report, unfortunately, did not make this as-

urance. Of particular interest to citizens following waste disposal issues is the recommendation to introduce legislation that would extend NRC licensing authority to some new Department of Energy facilities. NRDC supported this recommendation, but we urged the IRG to expand NRC licensing and safety reviews to include all defense-related facilities required for the handling and storage of long-lived radioactive wastes.

Visiting Environmentalists

Dr. Gerd Michelsen, Director of the Ökologie Institut, Freiburg, West Germany, and Vincent Richet, staff member of Les Amis de la Terre, Paris, France, worked in NRDC's Washington office for two months this fall, under a pilot fellowship program supported by the German Marshall Fund. They became familiar with U.S. environmental institutions and decision-making procedures, and gained firsthand knowledge about the efforts of U.S. non-governmental groups such as NRDC.

Fine Particles Study Now Available

The 300-page report which was featured in adapted form in our March-June 1978 issue is now available to the public in its entirety.

Respirable Particles: The Impact of Airborne Fine Particulates on Health and the Environment may be ordered by sending a check or money order (made out to NRDC) to: Daphne Tabannan, NRDC, 122 East 42 Street, New York, N.Y. 10017. The price per copy is \$10.00 for the general public, and \$5.00 for nonprofit groups and NRDC members.

Industry Advertising on Energy Issues

In a series of decisions over the past several years culminating last April with *First National Bank of Boston v. Bellotti*, the United States Supreme Court has broadly applied the free speech guarantees of the First Amendment to corporations. Increasingly, large corporations have turned to the print media, billboards, and television to communicate their views on issues of public policy.

The Clean Energy Project in the Washington office of NRDC is conducting a study of the form and content of corporate public policy advertising on energy-related issues. It would be most helpful if members who see an ad on the energy crisis, oil, gas, coal, solar or nuclear power, energy conservation, and related issues could send a copy or a description to: Jonathan Lash, Clean Energy Project, NRDC, 917 15th Street, N.W., Washington, D.C. 20005.

Faced with the prospect of documenting the environmental damage that would result from the logging being proposed, the Nixon Administration quickly shelved the whole idea.

The final blow, and the hardest one of all, landed on the Forest Service in the Monongahela National Forest in West Virginia.

The Monongahela National Forest was to the East what the Bitterroot was to the West—a forest which, for some reason, the Forest Service seemed obsessed with managing as a tree farm. Clearcuts dominated the forest, some of them shearing off the tops of whole mountains, and the rivers ran brown from erosion. Moreover, the Monongahela is predominantly a mixed hardwood forest, but the

Forest Service was applying silvicultural techniques which, according to a number of foresters, should be confined to softwoods.

During the summer of 1972, a law student worked in NRDC's New York office had unearthed the Organic Act of 1897—the original erabling legislation of the National Forests—and discovered some interesting language. All timber in the National Forests, it said, was to be "marked and designated" before logging, and only trees which are "dead, mature or large growth" could be cut. In forests with trees of different ages, a clearcut takes a lot of trees that are not "dead, matured or large growth." There didn't seem to be much question that the Forest Service was violat-

ing the language of the act to which it owed its existence.

On behalf of the Izaak Walton League of West Virginia, NRDC and Sierra Club lawyers went into court in the summer of 1973. In early 1974, the district court affirmed our position, and imposed an injunction against further clearcutting of uneven-aged stands in the Monongahela. The timber industry was thunderstruck. The Forest Service quickly appealed. In August of 1975, the Fourth Circuit Court of Appeals upheld the lower court, and applied the ruling to its four-state jurisdiction.

Thus began the battle that culminated in the passage of the National Forest Management Act of 1976.

The Battle for The Forests

The unanimous decision of the Fourth Circuit Court of Appeals upholding the district court ruling in the Monongahela case brought the timber industry to a crunching impasse. The Forest Service immediately suspended all timber sales in the National Forests of West Virginia, Virginia, North Carolina, and South Carolina. It was a calculated overreaction, since the Forest Service, under the terms of the court ruling and the Organic Act, was still able to sell timber on a selection cut basis and for purposes of thinning and disease control; it could even sell timber for clearcutting where the forest was uniformly mature or of large growth. Nevertheless, the Forest

Service preferred to create a climate of crisis in the four-state region. At the same time, it began to spread dire predictions about the effect of the Monongahela ruling on the rest of the nation.

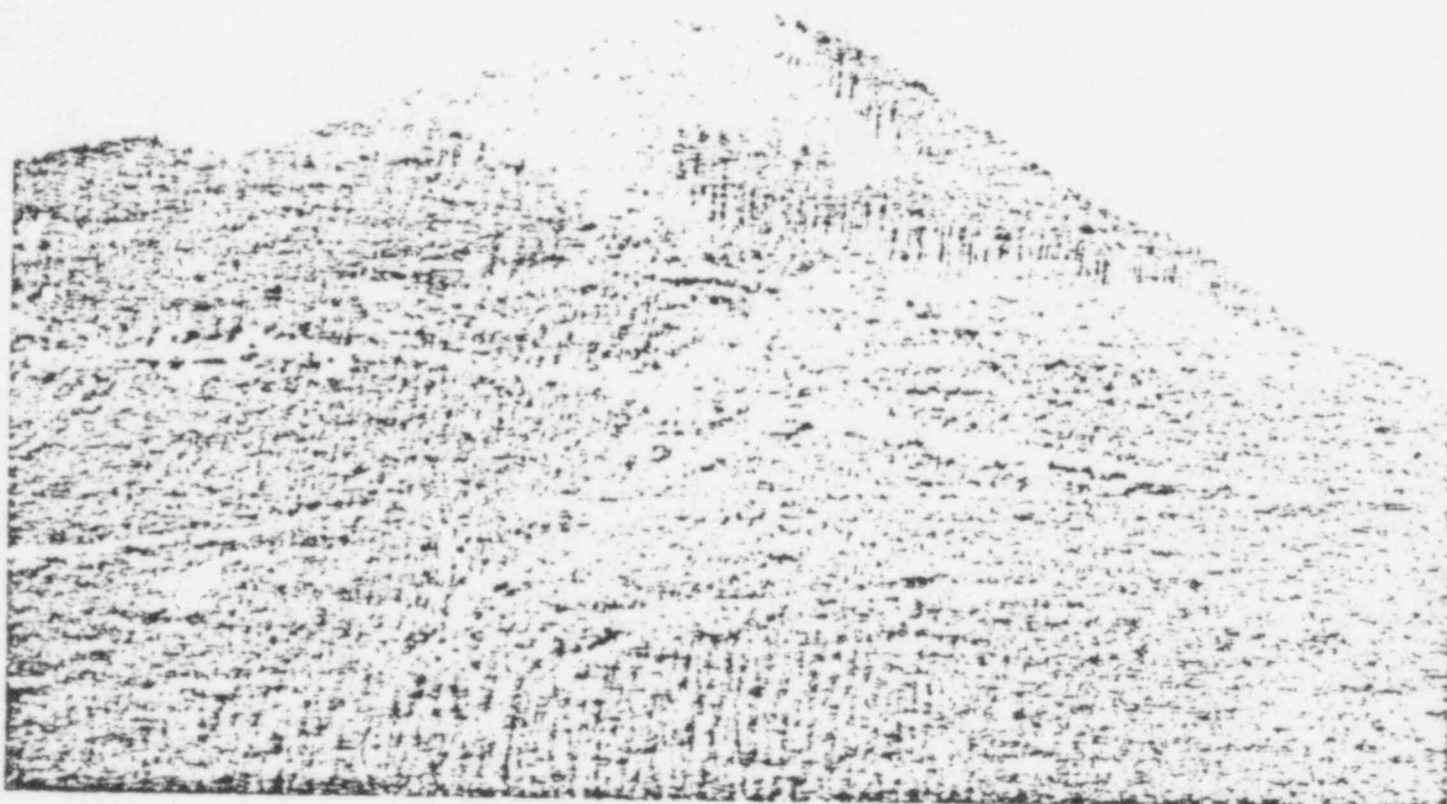
The Forest Service's scare-mongering was particularly unwarranted. For the Monongahela ruling to apply nationwide, the case would either have to go to the Supreme Court or else identical cases would have to be brought in all ten judicial circuits, with similar results. No timber shortage occurred as a result of the decision, mainly because most National Forest purchasers have large backlogs of uncut timber already under contract. And the National Forests, while an important source of supply, contribute only 22 percent of the nation's cut timber. If there was to be a crisis it was not imminent, and if it oc-

curred it would affect a few mill of operations rather than the entire wood products industry.

Still, the decision did raise a troubling issue. Over the years, clearcutting had come to be an accepted silvicultural practice, within certain limitations, but the Organic Act banned all clearcutting except in even-aged mature stands. The situation obviously called for congressional action to amend the Organic Act.

In the battle that followed, the person who emerged as the champion of the forest management reformer was Jennings Randolph, the Democratic Senator from West Virginia. He had listened closely to his constituents in the mid-1960s when they began to complain about the Monongahela clearcutting, and had gone to visit the forest himself. He had compared the devastation caused there by clearcut-

POOR ORIGINAL



A clearcut of several hundred acres in the Olympic National Forest in Washington. This photograph, taken in October of this year, demonstrates that twenty years of public outcry over excessive clearcutting have hardly changed Forest Service policy at all. Clearcuts of this size are still common in some of the western National Forests.

Photo by Tom Barlow

ting to carpet bombing by B-52s, and was heartsick over having seen the rivers and streams of his beloved state running red with mud from the clear-cut mountainsides. Randolph, who is now in his seventies, is known in the Senate for his great range of interests and concerns, and one might have questioned his staying power on any one issue. A smiling, kindly man, fond of anecdotes and jokes, he would not appear to be the type of Senator who is prepared to take on an entire industry respected, if not feared, for its deter-

mination and ruthlessness.

But he was. In the fall of 1975, Jennings Randolph assembled a small group of experts in the field of forestry, and they began to draft reform legislation for the management of the National Forests.

The Issues

Many people think of the battle over the National Forest Management Act of 1976 as a battle over clearcutting. It was that, and it was much more than

that. The legislation focused on a great many National Forest management practices which have come to trouble people greatly as the Forest Service has moved from the role of custodian to that of timber sales agent. One cannot recall the battle over the Act without mentioning the major issues that were—and in most cases still are—the sources of the National Forest controversy.

Of all the issues, the central one was still clearcutting. It had become symbolic of all that seemed wrong

Inflation's First Casualty

Several months ago we reported on an attempt by the President's economic advisors to institute a White House staff review of environmental and workplace health and safety regulations, under the banner of fighting inflation and increasing government efficiency, that resembled President Nixon's infamous "quality of life review" system. Since then some elements of the business community and their allies in government have been mounting a campaign to use this banner to salvage the environmental and occupational health and safety programs.

They have sounded the theme that the "regulatory agencies"—code words for EPA and the Occupational Safety and Health Administration (OSHA)—are out of control and must be reined in by the White House. On October 17, for example, the Department of Commerce held a "Regulatory Reform Seminar." Though two public interest representatives were invited to participate, the presence of business interests and their governmental allies predominated. The point of this media event was to publicize the idea of a "regulatory budget," controlled through the Office of Management & Budget, which would set specific limits on the costs that regulatory agencies could impose on businesses. Not surprisingly, the Department's background papers for the seminar suggested that the "regulatory budget" idea be tried out first on EPA and OSHA.

On the same day, the *Washington Post* carried an editorial contributed by Lloyd Cutler, of the influential Washington law firm of Wilmer, Cutler and Pickering, advocating greater "Presidential control" of regulatory agencies. (Mr. Cutler has represented a number of large corporations attempting to lessen their burdens in cleaning the environment; his firm was once picketed over his part in obtaining relief from the clean air laws for General Motors.) The bulk of this editorial was devoted to arguing that the President has the inherent power, regardless of statute, to shape or curtail the regulations of agencies such as EPA—a position rejected only six months ago by an American Bar Association Committee examining these issues.

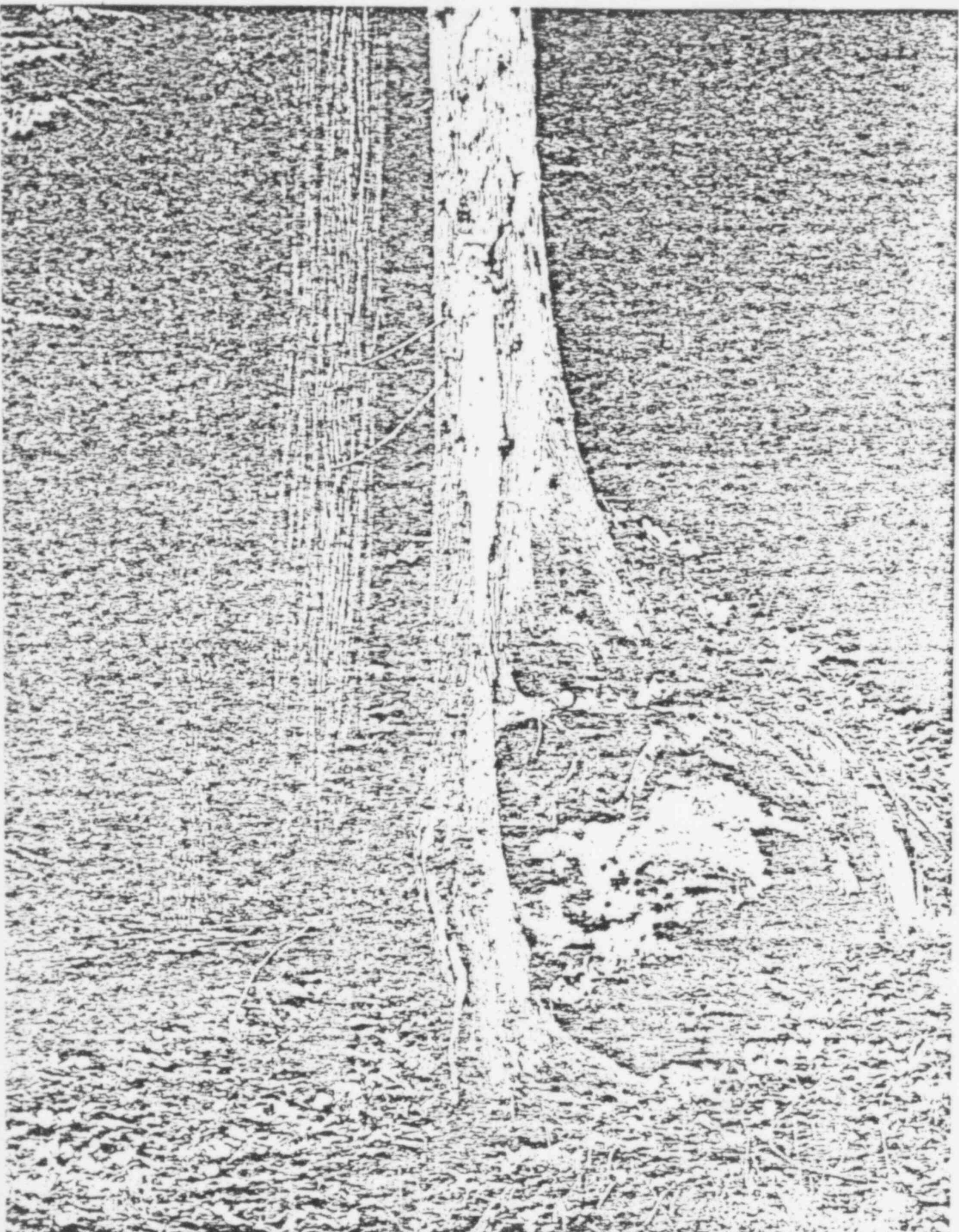
A week later, as preparations for the President's anti-inflation speech began, the *Washington Post* reported that the President's economic advisors were seeking to have him run the legal and political risk of adopting Cutler's theory. They proposed a new system, called the "regulatory calendar," under which they would have substantial control over whether, when, and how agencies like EPA and OSHA could act to protect the public from environmentally or occupationally caused disease.

The proposal produced a stormy reaction from environmental, labor, and consumer organizations, who wrote the President days later to warn him of the political reaction he

could expect from such a drastic shift of power.

Opposition apparently mounted within the Administration as well. Within a few days, the regulatory agencies had made a counter-proposal: that the President create a "Regulatory Council," composed of representatives of the regulatory agencies, as a means of providing a full look at the government's regulatory program and ironing out potential conflicts or overlapping between agencies. In the end, the President sided with the regulatory agencies and the public, announcing the formation of the Regulatory Council in his inflation speech on October 24.

Though environmental interests could take comfort in the economic advisors' failure to seize control over EPA's regulatory agenda, the government's anti-inflation program continues to threaten environmental and workplace health and safety programs. For example, the freeze on federal hiring announced by the President in his anti-inflation speech will, unless an exemption is granted, nullify entirely the increase in EPA's staff that the Administration lobbied to have put into the fiscal 1979 budget. It seems clear that the President's increasing emphasis on inflation, coupled with his economic advisors' misguided focus on regulations to protect workers and the public from environmentally caused disease, will continue to threaten commitments the President made to environmentalists and labor only two years ago. —Richard E. Ayres



Struggle between red fir and boulder, Olympic National Park, Washington

David Muench, Freelance Photographers Guild

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with the Forest Service. Satellite photos taken from space had shown Oregon looking like a giant checkerboard, cross-hatched with thousands of hundred- and two-hundred-acre clearcuts. Hikers and backpackers in the National Forests complained bitterly that clearcuts spoiled their vistas in every direction. Moreover, the Forest Service had begun to allow clearcutting all over the East, even though eastern hardwood forests respond well to selection cutting, which is generally more beneficial to recreational use and wildlife diversity. Many species, from common squirrels to pileated woodpeckers, cannot thrive in forests which do not have old-age timber represented among the trees.

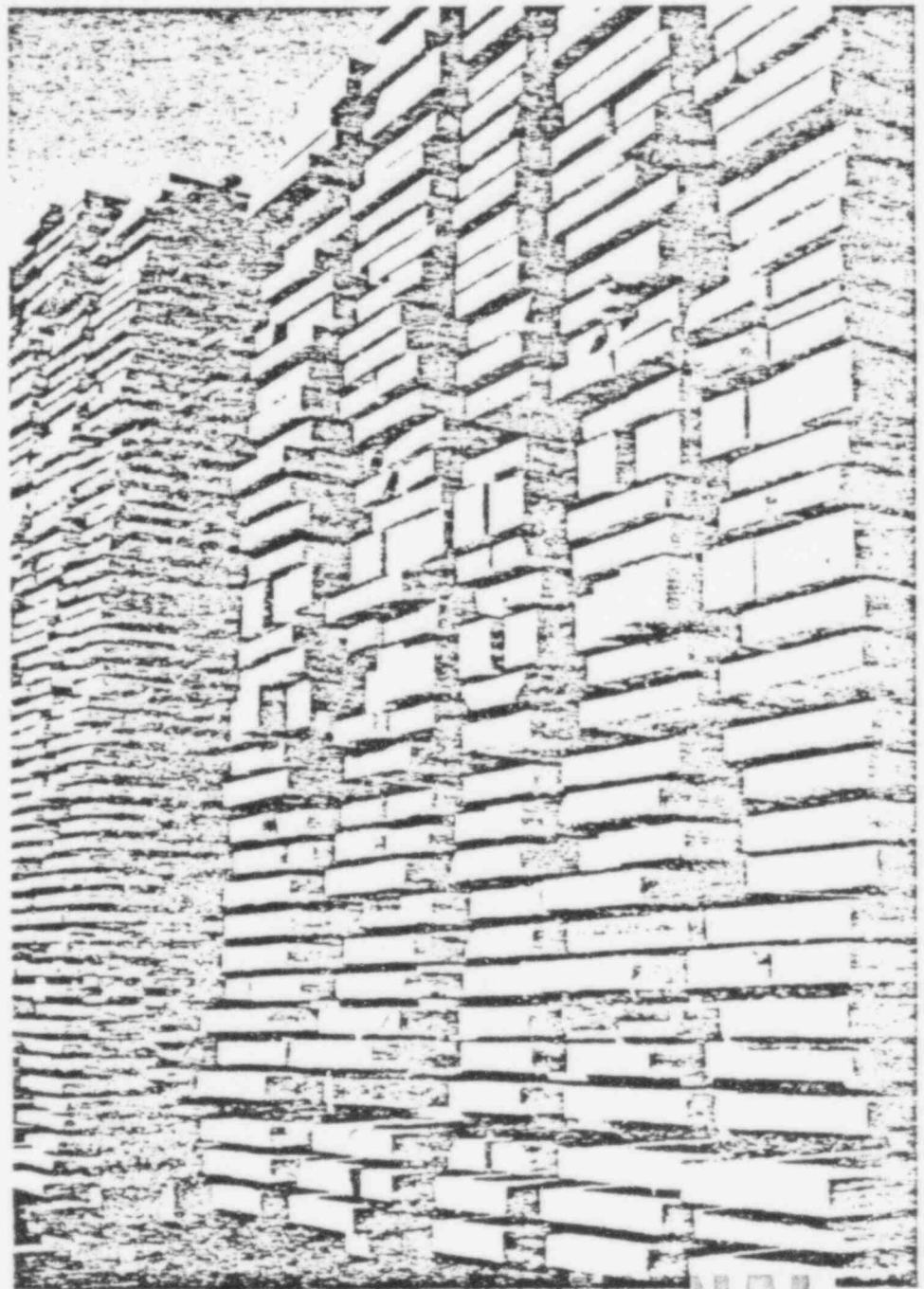
Clearcutting is the central element in a scheme of forest management (the insistent use of that Orwellian term, "management," was, to many people, also symbolic of what was wrong with the Forest Service) which is aimed at establishing single-age strata stands in the forests. Even-aged management, as the practice is called, makes clearcutting inevitable because all the trees reach the age of harvest at the same time. Once an even-aged management approach is adopted in a forest, somewhere in that forest clearcuts will be taking place each year. The timber industry likes even-age stands because they provide trees of uniform size and quality. But many people began to wonder whether they wanted their National Forests to be turned into a series of even-aged patches, especially if it involved unsightly clearcutting.

Another issue that began to arise in the 1960s was the clearcutting of hardwoods followed by their replacement with softwood pines, a practice known as species transfer. The practice was adopted largely because softwoods have more uses than hardwoods in the forest products industry; they also grow faster. Many people became deeply offended as vast hardwood forests in the Southeast, in the Mississippi Valley, and along the Gulf Coast were levelled and transformed into single species pine plantations. The outcry was especially loud when species transfer was undertaken in the publicly owned National Forests, causing the mixed hardwood forests of ash, sweet gum, oak, hickory, basswood, elm, and maple to disappear, only to be replaced by uniform stands of nursery-produced pine monocultures. Wildlife experts

pointed out that many species of wildlife dependent upon mixed hardwood forests were disappearing as the pine monocultures took over.

About twenty years ago, herbicides emerged as a commonly used tool of the forester engaged in even-aged monoculture forestry. In between the softwood seedlings that are planted to generate new trees in a clearcut, other vegetation, including hardwood shoots, sprout vigorously to life be-

cause of the plentiful sunlight. The softwood tree seedlings are crowded in and their growth rate can be affected, a source of irritation if one is concerned only about maximum wood fibre volume. So a blanket of herbicides is laid down periodically to kill the "competing" vegetation and free the softwoods for more rapid growth. Yet such herbicide use in forest management is troubling to many people. 2,4,5-T, one of the most heavily used herbicides, contains an extremely poisonous contaminant called dioxin, which has been traced to birth defects



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The Irrationality of Forest Service Pricing

The Forest Service has a strange method of pricing timber, a method that has been creating problems for timber-owning corporations and the millions of private tree farmers and small woodlot owners. Indeed, with its present pricing policies, the Forest Service will help create shortages of both timber and wilderness in the years ahead, when demand for both will be enormous. This timber pricing method results in tens of millions of board feet of National Forest timber being sold every year at less than the cost of growing and managing the forests.

The timber sale pricing process works like this: An appraiser, working in the National Forests, looks at a stand of trees about to be logged and assesses their value in milled form. From this figure he subtracts the purchaser's costs: harvesting the trees, transporting them to the mill, and turning them into lumber. Then he adjusts the new figure to guarantee the timber company a profit margin on the order of 13 percent. The remaining value of the timber is called the stumpage rate. At no point in this process are the many Forest Service costs for timber management calculated into the equation: managing the old forest and growing a new one are treated essentially as free services. Using the stumpage rate as a base price, the Forest Service then takes bids on the timber. If the trees are of exceptional quality—and grown Douglas fir from the Pacific Northwest, for example—the bidding may go quite high. But in many cases it stops just slightly above the stumpage rate, well below the level needed to recover taxpayer costs.

To see the extent to which costs are not recovered, one need only look at the *average* prices—*not* the highest prices—paid for National Forest timber in the various Forest Service regions, and compare these prices with the costs of preparing the timber for sale.

In Region Two (Colorado, Nebraska, South Dakota, and Wyoming) the average price paid for National Forest timber in 1977 was \$14.35 per thousand board feet; the

average cost was \$44.90.

In Region Four (Idaho, Nevada, Utah, and Wyoming) the average price for National Forest timber was \$18.62 in 1977; the average cost was \$35.35.

In Region Nine (Illinois, Indiana, Michigan, Maine, Minnesota, Missouri, New Hampshire, Ohio, Pennsylvania, Vermont, West Virginia and Wisconsin) the average price for National Forest timber was \$16.41 in 1977; the average cost was \$32.51.

The timber sales in which the Forest Service seems generally to be recovering its costs are primarily in the states of Oregon and Washington, where plenty of accessible old growth timber remains. (The cost calculations it might be added, are quite conservative: many timber management costs are simply not accounted for by the Forest Service in a fashion which enables them to be analyzed in comparison with timber sale income.)

Why do these below-cost sales hurt the timber corporations and the small tree farmers that have their own forests? Simply because any privately financed tree operation *must* recover management costs on sales of timber or go out of business.

Nationally, the profit squeeze on tree farming operations is serious. Texas pulpwood tree farmers complain that they are receiving the same prices per cord that they received immediately after World War II, despite a tremendous rise in forest management costs during the thirty-year period and a 400 percent increase in the use of pulpwood. An Oregon tree farmer recently wrote in the journal of the Society of American Foresters that tree farmers receive as little as 3½ percent return on their investment and pointed out, correctly, that he would be better off if he logged all his trees and put the money in a savings account, rather than reinvest it in growing trees. With demand for timber expected to double in the next forty years, this situation hardly augurs well for future timber supplies.

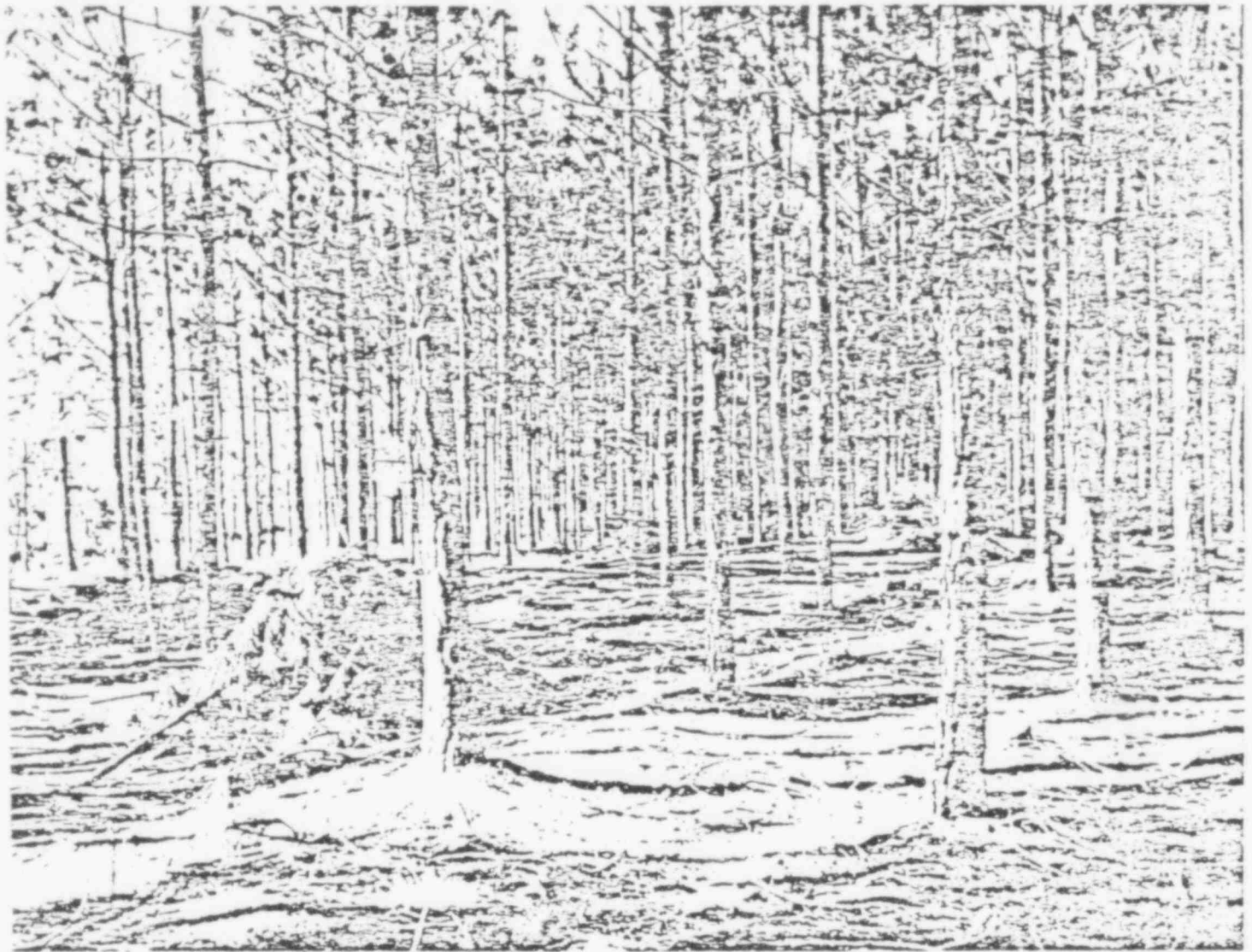
Large timberland-owning corporations are also hurt if they have to compete against huge volumes of

timber sold below cost in the National Forests. Farming trees is getting to be very expensive, with the costs of labor, nurseries, and fertilizer climbing rapidly—tripling in the last eight years, according to C. W. Bingham, Senior Vice-President of the Weyerhaeuser Corporation. In Weyerhaeuser's case, these costs are borne by a company that draws almost all of the timber it uses from its own lands. The profit shrinkage that such costs can create may have been a factor in Weyerhaeuser's decision to lay off thousands of employees in 1977 and 1978.

The Forest Service argues that its lands are managed for multiple uses, and justifies sales below costs on the basis that some of the investments needed for logging are beneficial to the other forest uses. Logging roads, it points out, may be used for access to recreation areas, and wildlife, especially deer and elk, can find more browse in recently cutover areas. But this rationale misses the point. The simple fact is that below-cost sale volumes and sale prices are unfair competition for the corporations and farmers who must recover costs on the sales of timber from their lands.

Unless the Forest Service changes its timber pricing policies, the National Forests will continue to be irresistibly attractive as a source of timber; indeed, several large timber companies, such as the Hines Lumber Company, own virtually no land of their own and cut most of their timber on public forestland. Some of these companies are making high profits from below-cost sales, enabling them to invest in superior mill technology and distribution systems, which give them a strong competitive edge in the industry.

A continuation of the present Forest Service timber sale pricing policies will mean that few timber-owning corporations and tree farmers will have the proper incentives to manage their lands intensively for maximum timber production. And the nation may suffer timber shortages in the decades ahead as demand for wood fibre rises rapidly.



A fourteen-year-old stand of slash pine on a tree farm in Coweta County, Georgia.

J. H. Huff/FreeLance Photographers Guild

and is suspected of causing other physical ailments in people exposed to it in forest areas where it has been applied. Citizen groups in Oregon and Arkansas have challenged its use in the National Forests.

The effects of logging on watersheds has been another volatile issue. Clearcutting along streams and rivers in the National Forests has exposed waters to the warming rays of the sun, which can degrade water quality and affect the life cycles of aquatic species dependent on cold waters. Erosion into streams has choked them with sediments, slash, and other logging debris. All through the sixties there had been calls—which, for the most part, went unheeded—for buffer strips along streams and rivers in order to protect watercourses.

Still another issue that has arisen with modern forestry is the rotation cycle of growth, harvest, and regrowth.

New mill technology has drastically reduced the age at which a tree can be used for the full range of wood products, including lumber, plywood, and fibreboard. If the lumberjack of a hundred years ago who felled the virgin trees with their massive girth could return and see the size of the trees being cut today, he would be incredulous. Trees as young as twelve years old with diameters of four inches are being turned into lumber. Today, when a forester speaks of "mature" or "overmature" timber, he is usually talking about timber that can be profitably milled; the timber is "economically" mature. But when a visitor to the forest sees the economically mature tree, he will think that he is looking at a sapling. If the timber companies are able to press their philosophy of forest "management" upon the Forest Service, trees exceeding a hundred years in age

will be a rarity in the National Forests. The magnificent old growth forests which most of us cherish will become things of the past.

The issue of the maturity of forests which will be harvested is closely related to the question of even flow sustained yield in forest management. Even corporate foresters have turned away from the cut and run philosophy that prevailed a hundred years ago. Today mills simply cost too much to be abandoned after five or ten years of frantic logging, after which the forest may be virtually useless. Today's corporate foresters want to have a steady flow of timber for decades, even for centuries. But there is considerable disagreement over the age at which forests should be cut in order to maintain an even flow of timber. The issue is coming to a head in the Pacific Northwest, where large stands of old growth timber re-

Botching Things Up in Alaska

Virtually all the trees cut in the National Forests in Alaska—about 500 million board feet per year—go to Japan. According to Forest Service figures, the net return to the U.S. taxpayer from the timber sold to Japan from the Alaskan National Forests amounts to a minuscule \$3 per tree. Since there are usually two to three thousand board feet in each tree, that comes to about a tenth of a cent per board foot. Actually, when the costs of management, federally-financed road construction for logging operations, and replanting and thinning of growing stands are counted against income, the U.S. taxpayers lose many millions each year on the timber sold from the Alaskan National Forests. The logs are so cheap that tens of thousands rim the shores of the fjords and estuaries of southeast Alaska, wasted because it doesn't pay to retrieve them when they break loose from the log rafts that are floated to mills. Sitka spruce, which is abundant in the Alaskan forests, produces some of the most lustrous, fine-grained veneers on earth. At least half of the annual harvest of Alaskan timber is

shredded into wood pulp for Japanese rayon mills.

The losses we suffer from this inexcusable underpricing policy are not limited to unrecovered dollar costs. The Japanese-controlled timber companies that buy the Alaskan timber recently told Governor Jay Hammond that they cannot cut trees in the state's National Forests if protected buffer strips are created along the streams. The companies say that they need the stream corridors to run roads up to logging sites; however, such road-building and associated logging have damaged over 150 water-courses upon which Pacific salmon depend for their spawning runs. The debilitation of the streams has already had a severe impact on Alaska's commercial fisheries.

Forest Service sales below cost in Alaska are also causing serious economic disruptions in the lower forty-eight states. The timber industry in Oregon, Washington, and California is trying to sell finished wood products to Japan, but the Japanese prefer to import unmilled saw timber, much of it below-cost

Alaskan timber, and manufacture their own wood products. The result: losses to the U.S. taxpayer and reduced job growth prospects in the Pacific Northwest.

Moreover, in a very real sense the Forest Service is taking the profits from its timber sales in Oregon and Washington and pouring them into losing timber management operations in Alaska—beginning the Oregon and Washington National Forests in the process. In these two states, the Forest Service has been consistently recovering costs on its timber sales, but the profits are returned to the Treasury and distributed to other National Forests where sales may not be recovering costs. At the same time, there are over 300,000 acres in the National Forests in Oregon and Washington which have been logged and not processed in the species most suited to that site by the Forest Service. If logging sale profits had been invested where they were earned, the Northwest timber industry could be looking forward to a steady flow of trees from these currently unproductive areas.

main. The Forest Service has been following a restrained sale policy, because it does not want to exhaust the old growth until new forests growing on cutover stands have reached considerable maturity—at least a century in age. The timber industry, on the other hand, is badgering the Forest Service with demands that it be allowed to cut the old growth at a very rapid rate; it can, one must remember, use the regenerating stands after a couple of decades. The Forest Service's concern about wildlife, recreational opportunities, watershed preservation, and other forest uses has prevailed so far, but no one knows how long it will last under sustained pressure from the timber companies.

With the encroachment of human population, and the desire of increasing numbers of people to have a wilderness experience, the disposition of the last wilderness areas in the nation has become an issue of enormous significance. In the lower forty-

eight states, almost all the remaining wilderness is in the National Forests. For several years, a review process has been going on to determine the amount of the remaining wilderness that ought to be preserved in the wilderness system. The final stage of the review, which is now called the Roadless Area Review and Evaluation, or RARE II, is nearing completion; RARE II assessments will be finished this year, and, if the Carter Administration holds to its promise, legislation for new wilderness designations will be forwarded to Congress sometime in 1979.

There are sixty million acres of roadless area under consideration which are virtually undisrupted by man and could be transferred by legislation to formal wilderness status. About twenty million acres are forestland, and the timber is coveted by the wood products industry. However, much of the timber is in remote sections of the Rockies and the coastal ranges, where

road-building could easily cost \$100,000 per mile. It is almost inconceivable that the sale price of the timber—even accounting for future regrowth—would recover such costs. Moreover, many of the high mountain zones where the timber is found are slow growth sites; if they are logged, it will take the regenerated stands many decades to reach maturity. These are, almost without question, below-cost sale areas. So why manage them for timber at all? Why build the expensive roads? Why lose taxpayer dollars attempting to regenerate timber rapidly on poor sites? And, more importantly, why log the nation's last wilderness areas when, even from a timber supply point of view, it may not be necessary? A recent Forest Service study in Oregon showed that there is a sufficient continuous flow of timber from already roaded areas in the state's National Forests to meet industry's mill needs now and into the foreseeable future.

All of these issues—clearcutting, species transfer, the rotation cycle, even flow/sustained yield, watershed protection, herbicides, and wilderness—were raised in the debate over the legislation to replace the Organic Act of 1897. The bill which Senator Randolph's group of forestry professionals drafted was introduced in the Senate in February of 1976. Shortly thereafter, a companion bill was introduced in the House by Representative George Brown of California. The legislation dealt with most of the forest management issues that were concerning people across the nation. It set specific standards in law for forest management practices, and directed the Forest Service to issue regulations to implement the standards.

In March of 1976, the late Senator Hubert Humphrey of Minnesota introduced legislation that did little more

than void the Monongahela decision by striking the language of the Organic Act.

Senator Randolph's bill was referred to the Interior Committee, which has jurisdiction over public lands and which had held the Church subcommittee hearings on clearcutting in the early 1970s. Senator Humphrey's bill was referred to the Agriculture Committee, of which he was a member, because of its jurisdiction over the Forest Service. A host of other bills dealing with the Monongahela issue were introduced by other legislators. Virtually all were inspired by the timber industry and did little more than annul the Organic Act. It was clear that the Randolph and Humphrey bills were going to be the legislative vehicles behind which the opposing sides would gather. The two committees decided to consider the legislation jointly. Hearings were held

and markup began in the early spring.

The timber industry, through its lobbying arm, the National Forest Products Association (NFPA), immediately mounted a scare campaign predicting huge timber shortages and dismal unemployment in the industry if the Organic Act were not amended or if the Randolph bill were enacted into law. The industry strongly supported the Humphrey bill, and was intent upon seeing as little restrictive language as possible creep into it during the markup. The industry campaign, which was fear-mongering from the outset, entered the realm of the absurd when the NFPA began warning of toilet paper shortages in the Los Angeles area if Congress did not meet its demands.

The Forest Service's posture during the whole period was typically professional. Professionals in any field are usually determined to be free of



Wood: Fuel of the future?

Freemance Photographers Guild

constraints so that they can practice according to their own self-imposed standards. The Forest Service is no exception. It likes to portray itself as the objective arbiter of competing demands in the National Forests, and has been unable to see how pressure from industry has pushed it far in the direction of industrial high volume forestry. The agency's position was that it wanted as little restraint in law as possible.

Senator Randolph did not sit on the Agriculture or Interior committees, but he was invited to the markups. Meanwhile, two other Senators had become determined to push reform language into the legislation: Dale Bumpers of Arkansas and Lee Metcalfe of Montana. Senator Frank Church of Idaho was also intent upon seeing his subcommittee's earlier guidelines put into law. Senator Bumpers succeeded in having economic criteria inserted to help assure that timber management was not pursued in areas where it was not profitable. Senator Herman Talmadge of Georgia, Chairman of the Agriculture Committee, supported Bumpers' amendment with the acerbic comment that "only an idiot forester would put his money into growing trees where he couldn't make a profit." Senator Talmadge's standard became known as the foresters' idiot test. Philosophically, it was a major breakthrough. Senator Metcalfe made headway with sustained yield/even flow language that affirmed the Forest Service's authority to practice its restrained sale policies in the "old growth" forests of the Northwest. He also labored mightily to insert language to limit the size of clearcuts and to strengthen the Church guidelines which became part of the legislative package that the committee finally reported in May of 1976.

The legislative action then shifted to the House, where hearings were held in the House Agriculture Committee on the Brown bill, the Weaver bill (which was the same as the reported Senate bill) and a grabbag of other bills, mostly industry-inspired. In the House markups, George Brown succeeded in inserting language dealing with species transfer and rotation ages, another important breakthrough.

The National Forest Management Act passed Congress and was signed into law by President Ford in early October of 1976. It was one of the great

environmental campaigns of the decade. Forest Service Chief John McGuire promised Congress that his agency would enact firm regulations to implement the guidelines that Congress had shaped. The Act was, however, far from a complete victory for conservationists. The standard setting language that Senator Randolph had proposed was too bitterly opposed by the timber industry to survive the gauntlet through Congress. And the eastern mixed hardwood forests were still open to clearcutting and even-age management. But Randolph's firm and unswerving leadership for reform,

and his strong presence throughout the deliberations in Congress, had served to inspire his colleagues to go much further than they normally would have, considering the heavy industry lobbying campaign directed at them from start to finish.

The Act allowed a two-year period for the preparation of regulations by the Forest Service, and created a committee of scientists to advise and counsel the agency in the drafting process. The committee has been meeting periodically for the past year, and the two-

THE FOREST SERVICE'S GIANT TIMBER SALES CAN HURT COMMUNITIES

One of the main justifications used by the Forest Service for its aggressive timber salesmanship is that it promotes "community stability" and "local economic growth." Towns that are heavily dependent upon the logging industry, says the Service, must be assured of a continuous and plentiful supply of timber or they will suffer drastic economic disruptions. Particularly in the West, the issue of economic stability is such a charged one that Senator Mark Hatfield of Oregon, during the debate over the National Forest Management Act of 1976, sought assurances that disruptions of local economies would be prevented by the bill.

But the fact is that, even in the National Forests areas that are being managed for heavy timber production, the Forest Service is not always encouraging community stability and economic health: in fact, the reverse is often true.

Throughout the Northwest, the major timber corporations are inexorably closing down their small mills in a number of towns and consolidating milling operations in large, integrated mill units at single locations. The Forest Service assists them in doing so with its practice of disposing of millions of board feet of timber in a single sale and stretching out the contracted harvest period over a number of years. This ensures the corporation of a sufficiently large volume of timber to make attractive the investment in large integrated mills. Large sales

also hurt the small independently owned mills. Only the bigger timber corporations can afford to bid on multimillion-board-foot sales; the smaller mills generally cannot. As a result, the small independent mills are being hurt by the Forest Service's emphasis on large sales, and, if they cannot get a dependable supply of timber, may be forced to close.

A good example exists in southern Idaho. Last year, the Forest Service made a multimillion board foot sale there to Wickes Forest Industries of San Diego, California. The sale was too large for the seven small sawmill companies in the immediate vicinity, so none of them bid on it. A second sale was then offered, and it too was out of reach for the local mill owners. "They're crowding the little man out," said sawmill owner Bill Pullin to a reporter from the Twin Falls Times-News. "It's just been hard for us to get timber." Asked by a reporter why local sawmill operators were not being offered sales small enough for them to bid on, the Twin Falls District Forester replied that the Forest Service had been "too busy working on the big sale."

Interestingly, the small, locally owned mills in southern Idaho are doing more than calling for smaller sales. They are now beginning to form alliances with conservation groups in the region, with whom they may have more in common than they do with the forest service and their larger counterparts in the timber industry.

year drafting process is now drawing to a close. What does the Forest Service have to show for all the effort? Very little, despite Chief McGuire's assurances, during legislative markups of the NFMA, that his agency would produce regulations that would effectively prevent forest abuses. The Forest Service is now saying that there will be no firm language in regulations—which are legally binding—but rather in Forest Service manuals, which are generally of an

advisory nature. In particular, the Forest Service is refusing to write strong language on the issue of sales below costs (see Box on page 13). The draft regulations issued by the agency last August, and due to be written in their final version after the first of the year, are deplorably weak at many points. Letters of concern will have to be directed to Assistant Secretary of Agriculture Rupert Cutler (Washington, D.C. 20250) if the weaknesses are to be corrected. Even the timber industry is

now saying that it does not need the timber from buffer strips along streams or off steep slopes, where soils are delicate and easily disrupted by logging. Yet the Forest Service does not want to write firm regulations controlling even these types of abuses. One hopes that it will not require a succession of lawsuits in coming years to bring the Forest Service within the letter of the law, but that recourse may well be necessary. With final National Forest Management Act Regulations,

Another Look at the Cost of Timber

For the past year, a parade of timber industry executives has been marching from one end of the Carter Administration to the other complaining about high federal timber prices. How are we going to keep housing starts up, they ask, if the price of lumber continues to rise 100 percent or more every ten years? Even the President's Cost of Living Council has taken up their cause. The only solution, says the industry and its supporters, is to open up the National Forests to vastly increased logging. After all, the National Forests are full of overripe, overmature, decadent stands of rotting timber which are being preserved just for the benefit of a few selfish preservationists.

When Forest Service timber sale prices are closely analyzed, however, the industry's high-cost-of-timber thesis begins to crumble. The prices that are being paid for publicly owned timber in the National Forests are generally low. In many instances they have been astoundingly low. Today, the price of timber on the stump is still a relatively insignificant factor in the rising cost of building a home.

On October 4 of this year, C. W. Bingham, Senior Vice-President of the Weyerhaeuser Corporation, testified on timber costs before the Council on Wage and Price Stability in Washington, D. C. Part of his testimony went as follows:

"The cost of all wood products in the average new home, including lumber, plywood, particleboard, snakes, shingles, moldings, and panels, has, according to *Business Week's* special report on housing last May,

declined from 13 percent in 1970 to 12 percent in 1977, and apparently are (sic) no more than that in 1978. Our own economists calculate that no more than 3 percent of the cost of the average house is wood products cost at the mill, before transportation, manufacturing and dealer charges, and the lumber component of that is about 4 percent of housing cost.

Thus, at present average new home prices only about \$2,500 of the \$60,000 new home price is influenced by the lumber producer, and since less than 40 percent of lumber cost is stumpage cost, less than \$1,000 of the home price is affected by timber price." (Last emphasis added.)

But, say the companies purchasing federal timber, the competitive bid purchase prices in new timber sales in the Pacific Northwest are now up to \$400 per thousand board feet for trees on the stump. At that rate, the \$2,000 board feet in the average single family home would cost \$4,800 on the stump, even before milling, transportation, and retailing charges.

But wait. A thousand board feet of milled two-by-fours is currently quoted in the *Wall Street Journal* commodity price reporting service as selling at about \$240. How can the federal timber purchasers be paying over \$400 per thousand board feet for timber on the stump that sells for \$240 as milled lumber?

The answer is simple. Not all timber on the stump is sold at, or even near, the \$400 level. Indeed,

NRDC analyses show the following average prices per thousand board feet for timber sales in Washington and Oregon, the states from which the bulk of the highest priced federally owned timber is sold: 1974—\$124.35; 1975—\$96.51; 1976—\$94.50; 1977—\$137.21. Thus, to the extent that \$400 prices are being paid by purchasers of federal timber, a tremendous volume of federal timber is being sold at \$20 per thousand board feet or less, a price level equivalent to \$200 or even less for the stumpage increment in a \$60,000 new house.

There are some other reasons why individual timber prices are high while milled lumber costs are much less. The method of estimating lumber volume in the standing tree tends to be highly conservative. Skilled employees in the most modern mills can extract from 20 to 30 percent more board footage from logs than the appraiser estimates. Also, the Forest Service suspects that some federal timber purchasers may be taking more trees from harvest sites than they are paying for. The Service is now beginning to mark timber in future sale areas where such thievery may be occurring.

What about the doubling in the price of lumber over the past decade? It is true that a 100 percent increase has occurred—but only from \$100 to about \$200 per thousand board feet. This amounts to only a \$1,200 increase over ten years in the cost of an average new home—a rate of increase in the cost of the home of about 2 percent per year. If the overall cost of living had increased at such a low rate over the last ten years, inflation would hardly be a national issue.

RARE legislative proposals, and the settlement of the Alaska lands issue, 1978 promises to be a busy year for those who are concerned about America's National Forests.

The Future of the National Forests

The history of the National Forests can be viewed as a continuing struggle over the issue: where shall the nation's timber supplies come from? It has always been a contested issue, and it will become even more vigorously contested in the years ahead, with recreation demands on the National Forests expected to double by the year 2000.

One thing is clear: people need trees, and trees will continue to be cut. In fact, they will probably be cut more than ever. As shortages of electricity, oil, and natural gas loom ahead, we are now beginning to return to wood as a source of energy and heat. The cutting of trees for fuelwood in New England is soaring, to the extent that foresters are beginning to worry about the condition of some of the forests. A person with a chainsaw and pick-up truck who goes out to cut a supply of wood to heat his home tends to take the best trees and leave the poorer ones to regenerate the stand. Such a practice, called "high grading," has always been rightfully condemned by foresters.

Wood is also being considered very seriously as a source of fuel for power plants. Some timber industry mills have already converted their boilers to use the wood wastes from their operations—wastes that they used to discard—in the place of costly oil or coal. Now some utilities are looking closely at wood fibre: in a few cities, such as Portland, Oregon and Burlington, Vermont, they are already stoking their central power generating units with wood.

At the same time, we are beginning to look to wood as an automotive fuel. Earlier this year, General Motors was reported in the *Washington Star* to be contemplating the powering of the entire U.S. auto and truck fleet within a few decades with wood alcohol produced from the sustained harvest of forty million acres of trees.

Meanwhile, timber experts are

predicting a doubling in the demand for trees by the year 2020 just for the forest products we now use—paper, lumber, and plywood. So the question is, where is all of the wood going to come from? Are we going to begin devastating America's forests all over again? Are the battles over competing uses in the National Forests going to increase in ferocity?

The answer: not necessarily, if we plan carefully and make some crucial adjustments in the nation's forest policies. In recent years there has been an explosion of knowledge in the science of growing trees; foresters have been mimicking agriculturists by developing fast-growing hybrids—which resemble trees as much as a Pringle resembles a potato chip—that exist only to be consumed. At the same time, super-efficient sawmill

technology has been developed which uses almost every part of the tree; as the mill employees proudly say above the din of their slashing, grinding, thumping machines, "We use everything but the squeal."


Tree plantations. Cornfield silviculture. Brave New Forest. If one is a natural as well as a National Forest enthusiast, the pejorative terms all apply. But critics of high volume fibre forestry sometimes miss the point that, with all of these silvicultural and technological advances, more wood products, including wood fuel, can be turned out from fewer acres, leaving more forestland available as natural woods and as wilderness. The real issue is not, will we have tree plantations, but which lands will be turned into tree plantations? Fortunately, we are blessed with a vast forest area to



A selectively logged forest near Hope, Alaska.

Ward Wells-Freeman Photographers Guild

choose from: 300 million acres of our nation are classed by forest surveyors as timberland. The ownership breaks down as follows: 90 million acres in the National Forest;* 50 million acres in State and other government ownerships; 60 million acres in corporate timberland ownerships; and 300 million acres in private ownerships. (Thirty-two thousand of the private ownerships have an average size of 2,000 acres—a prime size, from an economic standpoint, for the practice of intensive forestry.) That is a lot of forestland; together with the "supertrees" and new mill technology, it should easily be able to meet our national fibre needs. But how do foresters propose that we, as a nation, manage these timberlands? Particularly, how do federal foresters propose that we manage the National Forests for the optimum mix of all forest uses—for wood products, for recreation, for wilderness, for wildlife, for the safeguarding, at all times, of the forest soil and watersheds?

 Question: Do we want our National Forests to be managed as timber plantations? Would such forests truly provide for the many forest uses that people cherish? If the National Forests

*There are another ninety million non-forested acres in the nation's 157 National Forests.

are not to be tree plantations, doesn't this mean that we will have to look to the private sector to meet a greater proportion of our future fibre needs?

Question: If intensive forestry requires high levels of investment for start-up costs and high operating expenditures, and if timber plantations are to be producing at the maximum rates of productivity, how can the nongovernment forest sector allow the Forest Service, the single largest timberland owner and wood marketer in the nation, to adhere to timber sale pricing policies which do not recover costs, which shove large volumes of below-cost timber into fibre markets to compete with nongovernment timber and pull down price indexes—reducing the profit margins of nongovernment plantation forestry to the point that there are only marginal returns on investments? Might not below-cost timber sale pricing by the Forest Service discourage the investment in corporate and private timber operations needed to produce the massive amounts of fibre our nation will be consuming in a few short decades?

Question: If the nongovernment tree plantations are not generating fibre at maximum levels of productivity because of government competition, doesn't a lower rate of fibre productivity on plantations mean higher unit costs, and, as a result, higher product costs for the consu-

mer? With below-cost sales of National Forest timber, don't we invite the worst of possible worlds: (1) National Forests supposedly managed for multiple use being pushed toward a single use—logging—because of the attractiveness of below-cost pricing; and (2) a private forest sector which cannot achieve its full productive potential because of financial undercutting by below-cost federal timber sales?

Question: Might not private timber efforts be best supported only if the volume of timber sold by the Forest Service is moderated, and if below-cost sales are kept at an absolute minimum, thus encouraging mills to draw from high production tree plantations? In fact, to reach full production on private lands, might it not be wise to leave the National Forest old growth timber standing untouched?

Rhetorical questions. Hard questions. Questions to ponder. The answers will determine the sources from which future supplies of timber will flow. They will determine the amount of wilderness that remains in the next century. They may determine whether endangered wildlife species that share the planet with us will continue to grace our lives with their presence, or whether the last survivors will retreat, unseen and unheard, into a few relict patches of undisturbed wilderness.

The answers will determine the future of our National Forests.

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