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ESTABLISH A COMMISSION TO INVESTIGATE CLEARCUTTING OF TIMBER ON PUBLIC LANDS

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HEARING BEFORE THE SUBCOMMITTEE ON FORESTS OF THE COMMITTEE ON AGRICULTURE HOUSE OF REPRESENTATIVES NINETY-SECOND CONGRESS

SECOND SESSION
ON

H.R. 14354, H.R. 14888, H.R. 15042, and H.R. 15077

JUNE 20, 1972

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ESTABLISH A COMMISSION TO INVESTIGATE CLEAR-CUTTING OF TIMBER ON PUBLIC LANDS

TUESDAY, JUNE 20, 1972

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FORESTS,
OF THE COMMITTEE ON AGRICULTURE,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 1302, Longworth House Office Building, Hon. Thomas S. Foley (acting chairman of the subcommittee) presiding.

Present: Representatives Foley, Vigorito, Burlison, Teague, Kyl, and Baker.

Also present: Martha Hannah, subcommittee clerk, Lacey C. Sharp, general counsel; Hyde H. Murray, associate counsel.

Acting Chairman FOLEY. The Subcommittee on Forests will come to order.

The subcommittee meets today for consideration of H.R. 14354, and identical bills, to establish a commission to investigate and study the practice of clearcutting of timber resources of the United States on public lands.

The principal legislation before the committee is H.R. 14354 by Mr. Fraser of Minnesota for himself and Mr. Dow.

(H.R. 14354, by Mr. Fraser and Mr. Dow is identical to H.R. 14888, by Mr. Fraser, Mr. Dow, Mrs. Abzug, Mr. Badillo, Mr. Biaggi, Mr. Bingham, Mr. Brademas, Mr. Buchanan, Mr. Cotter, Mr. Danielson, Mr. Dellums, Mr. Frenzel, Mrs. Grasso, Mr. Gude, Mr. Harrington, Mr. Helstoski, Mr. McCloskey, Mr. Matsunaga, Mr. Moss, Mr. O'Hara, Mr. Pike, Mr. Rees, Mr. Scheuer, Mr. Seiberling, and Mr. Waldie; H.R. 15042, by Mr. Symington; and H.R. 15077, by Mr. St Germain. The text of H.R. 14354 and the departmental report follow:)

[H.R. 14354, 92d Cong., second sess.]

A BILL To establish a commission to investigate and study the practice of clearcutting of timber resources of the United States on Federal lands

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) there is hereby established the Interdisciplinary Clearcutting Practice Study Commission.

(b) The Commission shall be composed of seventeen members as follows:

(1) Five Members of the Senate, to be appointed by the President of the Senate;

(2) Five Members of the House of Representatives, to be appointed by the Speaker of the House; and

(3) Seven members appointed jointly by the President of the Senate, upon recommendation of the majority and minority leaders, and the Speaker of the House of Representatives of whom—

(A) two shall be representative of the timber and lumber industry;

(B) three shall be from the faculty of an accredited college or university, one of whom shall be a forestry expert, another an ecology expert, and the other an expert in one of the social sciences; and

(C) two shall be individuals who are recognized leaders in the field of conservation.

(e) A vacancy in the Commission shall not affect its powers, but shall be filled in the same manner in which the original appointment was made.

(d) The Commission shall elect a Chairman and a Vice Chairman from among its members.

(e) Nine members of the Commission shall constitute a quorum.

SEC. 2. (a) It shall be the duty of the Commission to conduct a full and complete study and investigation of the practice of clearcutting of timber on Federal lands with a view to determining whether it is in the best interests of the United States to permit the practice of clearcutting in connection with the timber resources of the United States on Federal lands, and to the extent, if any, that such practice is in the best interests of the United States, the best and most effective method or methods of carrying out such practice.

(b) The Commission shall, within eighteen months following the date of the enactment of this Act, transmit to the Congress a report which shall set forth the results of its study and investigation and its recommendations with respect thereto.

(c) The Commission shall cease to exist sixty days after the submission of its report to the Congress.

SEC. 3. (a) The Commission or any committee thereof may, for the purpose of carrying out the provisions of this Act, hold such hearings and sit and act at such times and places, and take such testimony, as the Commission or such committee may deem advisable. Any member of the Commission may administer oaths or affirmations to witnesses appearing before the Commission or any committee thereof.

(b) Each department, agency, and instrumentality of the executive branch of the Government, including independent agencies, is authorized and directed to furnish to the Commission, upon request made by the Chairman or Vice Chairman, such information as the Commission deems necessary to carry out its duties under this Act.

SEC. 4. (a) Members of the Commission who are Members of the Congress shall serve as members of the Commission without additional compensation, but shall be allowed necessary travel expenses (or, in the alternative, a per diem allowance in lieu of subsistence and mileage not to exceed the rates prescribed by the provisions of subchapter I, chapter 57, of title 5, United States Code), and shall be reimbursed for other necessary expenses incurred by them in the performance of duties imposed upon the Commission.

(b) Members of the Commission who are not Members of the Congress shall receive compensation at the rate of \$100 for each day on which they are engaged in the performance of duties of the Commission, and shall be entitled to reimbursement for travel, subsistence, and other necessary expenses reasonably incurred in the performance of the duties of the Commission.

SEC. 5. (a) The Commission may appoint and fix the compensation of an executive director and such other staff personnel as it deems necessary. Staff personnel shall include experts from the physical, life, and social sciences, as well as the humanities, so that the study approach is interdisciplinary.

(b) The Commission may procure the services of experts and consultants without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and may compensate such experts and consultants without regard to the provisions of chapter 51 and subchapter III of chapter 53 of that title relating to classification and General Schedule pay rates, in accordance with section 3109 of that title.

SEC. 6. As used in this Act, the term "clearcutting" means the practice customarily used in the timbering industry which requires the removal of substantially the entire stock of timber within a particular designated area for the purpose of commercial harvest of timber or silviculture management of timber.

SEC. 7. There are hereby authorized to be appropriated such sums, not to exceed \$2,500,000, as may be necessary to carry out the provisions of this Act.

DEPARTMENT OF AGRICULTURE,
OFFICE OF THE SECRETARY,
Washington, D.C., June 19, 1972.

Hon. W. R. POAGE,
Chairman, Committee on Agriculture,
House of Representatives.

DEAR MR. CHAIRMAN: As you requested, here is our report on H.R. 14354, a bill "To establish a commission to investigate and study the practice of clearcutting of timber resources of the United States on Federal lands."

This Department recommends that H.R. 14354 not be enacted.

H.R. 14354 would establish a 17-member Interdisciplinary Clearcutting Practice Study Commission to conduct a study and investigation to determine whether it is in the best interests of the United States to permit the practice of clearcutting timber on Federal lands and, if so, to determine the best way to carry out such practice. Within 18 months the Commission would report its findings and recommendations to Congress.

The Department of Agriculture supports the objective of a continuing review of timber harvesting practices including clearcutting. In recent months the Forest Service of this Department has undertaken five major studies of timber management including clearcutting. Two private studies and a study initiated by the Council on Environmental Quality have also been recently completed. The attachment provides additional information on these studies.

After extensive hearings and review of clearcutting practices the Subcommittee on Public Lands of the Senate Committee on Interior and Insular Affairs suggested policy guidelines for timber harvesting in a recent Subcommittee Report, "Clearcutting Practices on National Timberlands," 92d Congress, 2d Session. Two of the four guidelines relate specifically to the use of clearcutting as a harvesting technique and include the necessity of a multidisciplinary review of the potential impacts. Another of the guidelines emphasizes the need for obtaining an adequate research base for making timber management decisions, including when and where to clearcut.

The Forest Service recognizes the Subcommittee guidelines as a clear expression of Congressional and public concern. The guidelines are technically sound and represent a desirable and constructive policy statement for future National Forest System management. The Chief of the Forest Service in a letter dated April 3, 1972, assured the Subcommittee the guidelines would be reflected in Forest Service guidelines and directives for planning new timber sales. The Forest Service action plan to accomplish this has been distributed to the field units. We understand the Director of the Bureau of Land Management in a letter of April 18, 1972, has given the Subcommittee similar assurances.

On September 2, 1971, the President announced the appointment of the new Presidential Advisory Panel on Timber and the Environment to study and advise the President on the entire range of timber management and environmentally related problems, including clearcutting. The panel is expected to report later this year.

Because of these comprehensive and wide ranging recent studies and activities, we think, it would be most productive to begin to act on their results and recommendations. At the same time, we will continue to review timber management practices under existing authority to assure that we have adequate and useful information on its environmental impacts. Accordingly, we believe the study proposed in H.R. 14354 is not needed at this time.

The Office of Management and Budget advises that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

J. PHIL CAMPBELL,
Under Secretary.

Enclosure.

USDA COMMENTS ON H.R. 14354

In recent months the Forest Service of this Department has undertaken major studies of timber harvesting techniques, with emphasis on clear-cutting practices. These included specific and regional timber management and harvesting studies involving the Monongahela National Forest in West Virginia, the Bitterroot National Forest in Montana, and a Task Force study of timber management in four of the National Forests in Wyoming.

Additionally, the Forest Service made a nationwide review of National Forest timber management practices and identified specific timber management and

related problem situations and suggested responses to those situations. The Forest Service has adopted a number of changes in policy and practices that were suggested in the reports.

Independent studies have also been made of timber management practices on National Forest System lands. The Bolle report entitled "A University View of the Forest Service" was researched and written by six faculty members of the School of Forestry of the University of Montana. They examined multiple-use management on the Bitterroot National Forest. The West Virginia Forest Management Practices Commission conducted a similar study of the Monongahela National Forest. Both reports presented recommendations, many of which, together with Forest Service study team recommendations, have been incorporated into the Forest Service action plan.

Further, the Council on Environmental Quality requested five university forestry school deans to each prepare a report commenting on clearcutting and related timber management problems. Each forestry school dean saw the practice of clearcutting as an acceptable tool. Likewise, each dean recounted instances where clearcutting had been misapplied and presented detailed criteria for proper application.

Mr. FOLEY. The first witness this morning will be the Honorable Gale W. McGee, U.S. Senator from Wyoming.

Senator McGee, we are glad to have you before the subcommittee.

STATEMENT OF HON. GALE W. MCGEE, A U.S. SENATOR FROM THE STATE OF WYOMING

Senator MCGEE. Thank you, Mr. Chairman. This is a proper way to start a Member of the other body off in the morning, by raising the level of his companionship. I must say I was coached to say that. It is hard for a Senator to have to confess to that, but nonetheless, the message is now delivered.

Mr. FOLEY. Senator, you will find that warmly received on this side and generally agreed to.

Senator MCGEE. I suspect we have a consensus here this morning, at least with the rhetoric. I also want to express a particular appreciation to Don Fraser and to my colleague, Teno Roncalio, both of whom have sponsored legislation on this matter. But I do not want to proceed to the question at hand until I take 30 seconds to acknowledge the presence of my pride and joy, John Kyl. Few know this, because he will not confess to it any more, but he was the first student I ever had as a teacher. He was my finest debater. I was getting a teaching degree at Wayne State Teachers College, his home was in Wayne. We had a cracking good team, thanks to John. He kept me honest and won my credentials for getting a job finally in one of the unsuspecting school districts of the State of Nebraska.

John was honest to his upbringing and his teaching because in those days I was president of the Young Republicans on the campus at Nebraska Teachers College. It was not until I learned to read that I shifted parties.

With all sincere appreciation, I want to acknowledge Congressman Kyl's presence here this morning. It brings back many nostalgic recollections of the good old days, as we used to call them.

Now, on to the matter at hand, Mr. Chairman.

I have a statement here that I would like to submit for the record and address myself to its highlights, if that is permissible. I will read it if you insist on a droning operation.

Mr. FOLEY. We would be glad to have your statement included in its entirety in the record and would appreciate having your comments on any part of that statement you want to highlight.

Senator McGEE. Thank you, Mr. Chairman.
(The statement follows:)

STATEMENT OF HON. GALE MCGEE, A U.S. SENATOR FROM THE STATE OF
WYOMING

Mr. Chairman, for some time now, I have been increasingly concerned about the practice of clearcutting in our national forests, in particular, and the policies and practices of the U.S. Forest Service, in general. I want to commend this Committee for sharing my concern by moving ahead with this hearing. And certainly, Congressman Fraser and others, including my colleague from Wyoming, Congressman Roncalio, are to be commended for their sponsorship of and work in behalf of an effort to obtain a thorough, independent and interdisciplinary investigation of clearcutting.

But we here are not the only ones who are dismayed. So too are a growing number of citizens and newspapers in my own State and throughout the nation who also believe that the Forest Service's management policies have wreaked havoc with the environment. Yet, spokesmen for the Department of Agriculture, the Forest Service and the so-called harvesters of timber have said so often that there really is no problem, and that if there is, the Forest Service can handle it.

Believe me, Mr. Chairman, mistakes were made. And, so far, efforts to insure against repeat performances have been met with meager responses from the U.S. Forest Service. I know, having begun in 1968 to pressure the then-Secretary of Agriculture for the creation of a Blue Ribbon Commission to study clearcutting—a request that has been persistently rejected.

In April, 1971, after three years of frustrated attempts to have the Department of Agriculture itself take on the sponsorship of a thorough investigation into clearcutting by outside authorities, I introduced legislation akin to that which you are considering here today. Like H.R. 14354, my bill would authorize a two-year interdisciplinary study. It would go further by imposing a two-year moratorium on the practice of clearcutting—a difference I will address myself to a bit later in these remarks.

First, I would like to deal with the reasons for seeking such an investigation. For even as we meet here, soil is eroding, reforestation is being neglected, streams are silting and nutrient loss from soil is galloping toward sterility because clearcutting is proceeding unchecked in our national forests. It will be several generations, at best, before these areas will be restored, if indeed, they can be restored at all.

Today, the once great forests of our nation have been depleted to a point that would shame Paul Bunyan. But shame is not enough. It is not enough that Congress, the public, or even the U.S. Forest Service publicly beat its breast and utter words of contrition for our past sins. It is time we resolved to live in harmony with the earth we occupy so that those who come after will not be denied space and even time on this planet. It is time we learned to restrain our impulse to throw ourselves upon the resources with which Nature has endowed us in order to expand our profit margins as quickly as possible. It is time, in short, to cease measuring the value of our public forests on the scale of board feet of lumber.

Basically, all I seek is a rational approach—an approach that is arrived at in full awareness of current knowledge. We must also take into consideration the right of the public to have some say about the use of the resources which belong not to the Forest Service, not to timbering contractors and not to home builders, but to the people as a whole. Certainly, our policies must take into account the benefits to be derived from the proper use of timber resources. At the same time, we must guard the permanent benefits owed to the greatest number of people in the long run.

Now doomsday prophecies are admittedly easy to come by today, and my fears about the consequences of our continued reliance on clearcutting may appear to some to be such a prophecy. It isn't. Rather, it is an expression of hope—hope that we can learn to think and consider what must be done to save our environment—and that includes our forests—and, in the end, ourselves.

It so happens that the lands upon which I base my case are primarily lands with which I am quite familiar. They are lands of almost unsurpassed scenic and recreational value. Recreational use is burgeoning in these areas as elsewhere across the nation; and the Forest Service has been caught short, for at the same time it is encouraging the lumber industry to cut timber widely, it is facing a geometrically increasing demand for recreational potential. Yet, a decision to timber a given area in this region is tantamount to saying that we are willing to

move into it and clearcut in a few short weeks what cannot be replaced for generations. Thus, it destroys a needed recreational area in many instances.

While the Forest Service maintains that regeneration of "clearcut" areas does, in fact, take place readily, it needs to be kept in mind that natural regeneration often fails, as is evidenced by the numerous occasions upon which the Forest Service has had to come to Nature's rescue with seedling planting, and that replanting by artificial means often fails upon the first try and has to be repeated. Moreover, it is the Forest Service that is responsible for regeneration, not the lumber industry. Because the type of timbering operation I refer to is marginal in profit returns to the lumber industry, the industry would not be interested in operating in much of my State if it had to bear the costs of regeneration. In Wyoming, therefore, the Forest Service is not only nursemaid to Nature but to the lumber industry as well.

What some people who are, after all, owners of these public lands are not contending is that it is they who are to some extent subsidizing an intrusion and devaluation of these public lands.

I have pointed out, too, that the economics of lumber production in high mountain areas are marginal, and profit-taking a bit low in these areas. Why, then, the acceleration in the past few years in the industry? The answer, of course, lies in the development and application of machinery and techniques that make it possible to clearcut an area by upending as many as 1,500 to 1,800 trees a day; thus, leveling a stand of hundreds of acres in a very brief period of time. This machinery is not adapted to selective cutting, for its purpose is the swift removal of all trees in a given area.

It strains one's credulity to accept the Forest Service's and lumber industry's claim that from this policy, based as it is on technological prowess rather than on ecological or human values, many significant benefits can come. It is not just the chaotic "clearcut" landscape of recent years that invites our skepticism. It is also what we have seen in too many older cutover areas which indicates that regeneration of forests, no matter how cut, is a precarious and difficult matter.

There are other methods of regeneration harvest in our Federal forests, but it is clearcutting about which most of the current controversy rages. In 1969, of the 2.4 million acres in the 97 million acres of national forest commercial timberland, 21 percent was clearcut. Nevertheless, 55 percent of the total wood fiber volume harvested from just the national forests in 1969 was the result of clearcutting. I think the economic interest of timber operators in the clearcut method is obvious then, but it should not be our only or our overriding consideration.

For some years now, the quarrel over clearcutting has been exploding and needs little elaboration from me. Recently, there have been any number of newspaper accounts, television commentaries and editorials about clearcutting. Senator Church's Subcommittee on Public Lands held hearings on the practice of clearcutting and issued a report which contains some generally good suggestions. But this hearing today is evidence that the debate goes on. Action is needed.

Clearcutting hardly seems like management of the forests at all. Yet, it is a practice stubbornly pursued by Federal agencies charged with the trusteeship of our natural resources on Federal lands. It is a practice my own sight can scarcely believe. It is a sight distasteful to almost anyone who views a clearcut patch. But what is offensive to the eye or to one's aesthetic order is not the prime objection. Instead, it is the stubborn insistence of the Forest Service and industry that clearcutting is the best way to manage our forests.

Virtually anyone who reads has been exposed over the past few months to the considerable advertising effort being put forth by the timber companies of America and their various organizations, which are many, to try to convince the public not only that clearcutting is good but that it is—would you believe—"Nature's way." "I'm clearcutting to save the forest," one rather large ad published in May proclaimed, putting the words in the mouth of a forester for a large West Coast timber company.

Let me cite a few examples of "Nature's way." In 1968, I toured the Bridger National Forest at the urging of concerned Wyomingites and because of my own nagging concern about the condition of timbered areas in the Bridger. What I saw was staggering. I saw what at first was almost unbelievable to me—acre after acre that looked as if ton after ton of bombs had been dumped on the pristine Wind River Mountains. Erosion was working away at the shallow soils of the high mountain country. Choking siltation was rampant throughout the watershed. Natural reforestation was an abject failure. Forced reforestation was practically nonexistent. Slash piles, scar and erosion-producing roads were abundant and the ugliness of once beautiful and re-creating vistas was a tragedy of immense proportion. "Nature's way," indeed!

Soon after, I wrote to the Secretary of Agriculture with my first request for an independent Blue Ribbon Commission to examine the practice of clearcutting. The Secretary wrote back to deny my request. Several times after that, I reinstated my request, but the communications from the Forest Service were largely efforts to persuade me that what my eyes saw really wasn't so bad and that the professional expertise of our land managers would make everything all right.

But everything was not all right despite the torrent of excuse. I grew increasingly anxious about the carnage I saw on Fish Creek and in Jules Basin. Not too many weeks passed when I discovered that my anxiety about clearcutting had a much wider dimension than I had first supposed. In short, a full-scale controversy was in the making over clearcutting in places far afield from Wyoming.

In West Virginia, the State Legislature appointed its own Blue Ribbon Commission to look at the practice of clearcutting in the Monongahela National Forest. They did not like what they saw. In the Bitterroot National Forest in Montana, the Forestry School of the University of Montana, in a study of clearcutting practices there, flatly contradicted a whitewash study by the Forest Service. In Alaska and in Oregon, there was considerable data which supported the view that clearcutting needs immediate and careful reevaluation. All this is reality, not "Nature's way."

Mr. Chairman, I have gone to the Bitterroot myself since that time, as I have gone to other forested regions, including the Douglas Fir Region of the Pacific Northwest where, we are told clearcutting is an essential practice for regeneration. I remain convinced, however, that it is a practice in need of serious and careful rethinking. And if the pillage I saw in the Bitterroots was "Nature's way," we are in a very bad way.

If only for these reasons, then, I offered my proposal for a cease-fire—admittedly an unusual procedure. I made my proposal because a natural resource which belongs to all of the people is fast becoming a disaster area. Those who have been charged with the responsibility for protecting and managing that resource have been largely unresponsive to the growing cry for reevaluation.

Digging into the literature, I found that scientists, professional environmentalists and many foresters had expressed deeply troubled views, backed by some arresting data, on the practice of clearcutting. For example, the Subcommittee is undoubtedly familiar with the work of F. Herbert Bormann and Gene E. Likens on the nutrient cycles of an ecosystem in the White Mountain National Forest in New Hampshire, which found dramatic increases in the loss of water and nutrients following removal of all vegetation. While not necessarily transferable to all areas by any means, it is this type of study which should generate a good deal of caution about what we do with finely tuned and delicate ecosystems and microclimates in the forests of America.

Professor Curry, a geologist at the University of Montana, in his testimony before the Senate Subcommittee on Public Lands, raised disquieting questions about the effect of clearcutting and monocultural agriculture in our forests upon the nitrogen cycle of soil microfauna. Professor Curry pointed out in his testimony that: "Until some of these questions are answered, the advocacy of some Federally approved and widely used logging practices is seriously questionable, and the consequences of continuation of present Federal policies are grave."

More recently, Peter A. Twight and Leon S. Minckler have issued, for the National Parks and Conservation Association, a report entitled, "Ecological Forestry for the Central Hardwood Forest." This report is the first of five on different timber types occurring across the nation; and it describes forest practices which are, in its own words, "biologically sound, provide normal yields of commercial forest products, and protect and enhance essential non-timber values."

Concerning clearcutting in this central hardwood forest, the Twight and Minckler report says: "The Association (National Parks and Conservation Association) believes that while clearcutting may be profitable, it is not economic in the broad social sense of the term."

It is true that the Forest Service has appointed a number of in-house committees to investigate the practice of clearcutting. Not all of these studies were whitewash jobs in their entirety.

The study made on the Bridger, Teton, Shoshone and Big Horn Forests of Wyoming is a case in point. That study owned up to past disasters, called for revised procedures and for public involvement in national forest planning and management.

So there has been some progress, Mr. Chairman. Yet, my concern remains profound because, at the top, at the headquarters level of the U.S. Department of Agriculture and the U.S. Forest Service, there is clear evidence that the industry,

which is privileged to exploit our national forests, is still calling the shots to this day.

The closest we have come to the realization of a new regime of self-restraint with regard to our forests was in January when the Council on Environmental Quality proposed an Executive Order that would have given badly needed attention to environmental considerations before clearcuts were undertaken. But then, Secretary Earl Butz of the Department of Agriculture and the timber lobby collaborated in felling the proposal quickly, leaving the situation unchanged as the woodcutters desired.

In testimony before the Senate Agriculture Appropriations Subcommittee, which I chair, the Secretary gladly took credit for this decision, saying the Executive Order would have cramped the style of land managers by giving them the "burden" of establishing the environmental soundness of clearcuts. Secretary Butz testified that the timber industry leaders who descended on Washington in January, when the CEQ's draft Executive Order was pending, came at his invitation and that he did not feel it necessary to solicit the views of others who favored greater restrictions on clearcutting.

The Washington Evening Star, which, as you know, Mr. Chairman, is not always unfavorable to the Administration by any means, saw in all this activity what it termed a "Clear-cut Cave-in." I cannot think of a better term, so the *Star's* will do well enough.

Since January, the Secretary has gone on to order increased sales from the public timberlands allegedly to help hold down the cost of building materials. It also, of course, frees lands now held in reserve for early consumption by the loggers whose advertising campaign in behalf of the highly profitable clearcutting practice bore fruit but not trees.

Mr. Chairman, I have been chastised before for suggesting that we might find substitutes for wood in such admittedly important areas as home building. Nevertheless, I repeat it. What we cannot find any substitutes for are the intangible values created out of great mountain forests. There has to be more to life than consumption of resources, for both individuals and great nations.

So, my remarks have centered on the necessity for a truly independent study of clearcutting. My own bill, as I have pointed out, also would call a halt to clearcutting during the conduct of such a study. As much as I believe such a cease-fire is warranted, it is the study itself which is the more compelling need.

The scientific community places great emphasis on the requirement for more and better data, because it is what we don't know about the effects of clearcutting that is so crucial. An independent study can only add to our wisdom and to the wisdom of those responsible professionals who manage our national forests, especially if it is a multidimensional consideration of clearcutting in all its aspects, from economic and silvicultural to social and ecological.

Such a study, aimed at insuring the biological integrity of our forests and preserving our options for the future, is the purpose of my own bill, S. 1592, and of the measures before this Subcommittee today. I applaud the Subcommittee for the leadership shown in bringing the matter to specific hearings today and hope we can proceed soon to establishing the authority for the investigation.

Senator McGEE. The whole problem of clearcutting is obviously foreign in many respects to a college professor, particularly a professor of history. But, because of my constituency in the Rocky Mountains, I had my nose rubbed in it, whether I liked it or not. The upshot of it was that I went through a great learning process and have since devoted much time to trying to learn more.

In seeking to learn more, I have visited about a dozen national forests of one sort or another to examine the differing problems that clearcutting poses.

These include not only our national forests in Wyoming and in northern Colorado, but the Mount Hood National Forest in Oregon and three of the national forests in your own State, the Bitterroot in Montana and many others.

I went up to the Cedar River watershed, east of Seattle, because that was a particularly fascinating and experimental operation that had been sealed off from use by people to indulge clearcutting and watershed control at the same time.

Likewise, I visited the tree farming operations of private timber industries. My blind spot—I have lots of blind spots—is that I have not yet been into the pine forests of the South. But I have tried to study a good bit about that in preparation for what I hope is an upcoming venture into that area very soon.

The shock of clearcutting operations was visited upon me first because of a Wyoming experience. There we found in the Bridger National Forest and the Shoshone National Forest areas where clearcutting had been undertaken very frankly for the first time. In the Jim Creek area, as an illustration to be specific and in the Fish Creek region, and in Jules Bowl, to name three or four of a dozen areas, the consequences of clearcutting were shocking.

We found areas, for example, that had not only been clearcut in 1958 with no resulting regrowth, and I underscore this failure of regrowth even after three replanting efforts in one of those areas. The best intelligence that we could get from the professionals in the area, basically the Forest Service which was very cooperative in trying to answer my questions, was that we were talking not about a generation before we could expect a replacement of a commercial growth of trees, but more than that, two or three generations. They are talking about 100, 120, or 140 years, due to altitude, soil chemistry, short growing season, all of these variables and more.

This was the real shocker, that here was a clearcutting operation in a national forest that was committed, and I cite the 1960 Multiple Use Act, to a use for many purposes, only one of which was timbering, in perpetuity * * * in perpetuity. This meant in the areas that I examined, which are accessible by trails and roads, whatever use they may have had for recreationists was gone at least for a century; whatever use they may have had for wildlife was now open to question, whatever esthetic consequences there were had been tossed away. Because in those days this was a primitive era of this kind of clearcutting in the West, I suppose these other factors for whatever reasons had not been taken into account adequately. In some of the areas, Jules Bowl first comes to mind, it really looked like B-52 bombers had used the area as a bombing range. This was the residue left.

So what it said to me was that we had plunged into a timber management policy on a broadside basis without selecting out, with a scalpel, the areas that perhaps could withstand such an approach to harvesting timber. I understand the need for clearcutting, but it is uneven as a beneficial use. I understand the great pressure for clearcutting because it is a cheaper economic process if you can go in and take out every tree that is there in your first operation with a bulldozer and a chainsaw.

This is understandable, but it is only a part of the license that needs to be attached to the national forests. The rest of this license involves the public interest and that means the broadest public interest. For those trees do not belong to the Governor of Oregon or the Governor of Washington or the Governor of Iowa, or even the people of those States alone. They belong to the people of the United States as long as they are in our national forests. Therefore, we are only insisting that the Forest Service take the big view of it and assess the operations for timber harvesting, for the preservation of outdoor activities, recreational opportunities, wildlife, and more, in the broadest sense.

Having said that, let me add that I visited areas in the State of Washington where a very constructive case was made, and I think some constructive programs are under way, to establish the validity of clearcutting because of the peculiar demands, let's say, of Douglas fir, and of the additional luxury of abundant rainfall at lower altitudes, particularly in the coastal range which I visited.

But we also found, even there in the State of Washington, some of the problems beginning to rear their heads the moment you got away from the heavier rainfall and got into higher altitudes, around 2,500 to 3,000 feet; there the change began. We found there that even in the private tree farming business there were some experiments underway testing this change.

For example, instead of clearing an entire area, taking everything, they protected the overstory and harvested only the commercial girth trees in the middle and at the same time protected the ground cover. Then 10 years later they would move in and take what had been the original overstory which had been replaced by this time; in a series of cuts over 30 years they would have clearcut the area, but it was staged, it was staggered and it seemed to be a successful experiment at that level.

This, again, was a one-of-a-kind thing, it was an experiment. It was a recognition of the fact that we went at this thing like a bull in a china shop when it was first laid out. Later, I visited the Mount Hood National Forest, in the State of Oregon, and there found the clash, the direct clash of the consequences of an eager clearcutting operation a few years ago, coming head on into a collision with public use. Whole mountainsides laid bare alongside lakes and recreational areas in the Mount Hood region. But, I hasten to add that there we found a very unique performance by a member of the U.S. Forest Service, a young forester who had already laid out some new lines of conduct he proposed that would limit the size of the clearcut area to less than 100 acres at any time, preferably 50 or 40 acres, and to configure the periphery of the clearcut area so that it more nearly rolled with the surrounding terrain. He planned to locate clearcuts on the south side of a mountain range exposed to the sun for readier growth, and provided for a specific removal distance wise from any existing roads or access routes into public recreation areas, and other important criteria.

This again was unique. It was a rare situation, but it is one of those bits of input, with its additional recommendation that I understand is being given more serious consideration now that every Forest Service district has at least one landscape architect among its personnel. It must make a difference.

Now I say those things to sweep the diversity of those aspects of the question and all of it by leaving out any mention of the Bitterroot, because I have saved that for a special reference. The Bitterroot in southwestern Montana I would think more nearly meets the phrase "the rape of the public forest" than any other undertaking that I have seen. This is mountainside after mountainside, thousands upon thousands upon thousands of acres scattered over an entire area where this massive assault through clearcutting was undertaken, and on slopes that would not tolerate it; in fact, the consequence was disastrous on these slopes from erosion, with the complete loss of even ground cover, which has led to the hastily concocted corrective measure now of trying

to change the landscape of those slopes with terraces, at great expense, to check the consequences of man's error

In this process, Mr. Chairman, and I admit I am a latecomer in the business, I appealed to the Forest Service at the very beginning of my interest in this, in 1968. The response in those days was: "Well, there is nothing wrong or out of control. We know what we are doing and corrections are possible." So when we led the Forest Service teams into the areas, showed them areas that had not responded to, not natural regrowth because that had long since failed, but even artificial replanting, three times; the next response I had from the Forest Service was: "Well, there is nothing wrong but if there is we did not do it."

Finally I suggested that before we go further in approving clearcutting as a matter of policy that we ought to have the practice of clearcutting carefully reviewed, reassessed by the best professional personnel we could command. The reason for that was to take into account all of the concerns that we rightfully have about timber supply for housing and other needs. But also, the concern that we have about what it may do to soil nutrients, about what it may do to the next generation of trees, if something comes back, and how the changes vary from one section of the country under one kind of terrain to another.

It seemed to me that at the rate at which we were proceeding with clearcutting, it was important to proceed, if we were to do so, with greater skill and greater selectivity, rather than with the blanket approach. That really was all that was at stake in my recommendation for a blue ribbon commission. But that was turned down by the preceding administration, by the Secretary of Agriculture, I assume on the recommendation of the director of the Forest Service.

But after we harangued still longer, the Forest Service announced just before this last series of demands, a day or two before, that they were going to conduct their own inhouse study of these national forests in Wyoming. I have no idea why they selected the forests in Wyoming for that special study, but they chose them.

I was one of the first to charge that this would be a whitewash job, but I have had occasion to say since, after covering the ground of their study, and examining the study, that it was a good, tough, finger-pointing, inhouse study in which, for the first time, the Forest Service pointed its finger at itself in a very public way and said, "We made a mistake, we made some mistakes." They exposed within their own ranks not only the diversity of questions that had not been responded to, but the extremes that had been resorted to before a careful study was done in advance of any system of timber harvesting.

As one of the administrators of the Forest Service program had had occasion to say to me soon after that, I was complimenting the Forest Service on having done this tough job on itself, he said, "As you know, Senator, we would not have had that until the year 2001 if you had not kicked the hell out of us. We were shamed into it. We should have done this before we cut rather than after."

That is the story of this kind of operation, a story to which embellishments are added by the real professionals in the field who also ought to be heard more than we have heard them.

The University of Montana study, the Bolle study, of what the consequences were for the future, not the present, of clearcutting in the Bitterroots, is a fine example of professional study. Another one, the Hubbard Brook study in New England, would suggest that in

that limited area, at least, clearcutting takes something out of the soil in nutrients that is not returned even in regrowth, and that you have already penalized the next generation of trees by clearcutting in the first place, and that this process, if you project it in repetition, ultimately meant, as they concluded, that you were borrowing on the regeneration capability of tomorrow and tomorrow and tomorrow for a quick harvest today.

There have been other fine studies made that do not have all the answers, I hasten to add, but do raise the right questions, and that is its point. We have been afraid to ask ourselves the tough questions because we thought we might not get the right answers.

We aired this question before the Agricultural Appropriations Subcommittee, of which I am the chairman on our side of the Hill there. We had the Environmental Protection Agency comment on it along the way, because they had problems with it. The upshot of it all was that the EPA and Russell Train's group, the Council on Environmental Quality both prepared a proposed set of new guidelines to direct, in intelligent ways and yet in more cautionary manners, the processes of clearcutting.

They sought to define the kinds of terrain, the locations, the altitudes that would restrict authorizations for clearcutting in advance, as long as it was on the public lands.

The guidelines would have put nobody out of business, but rather it simply pointed directions. This was prepared as an Executive order to be issued by the President last January. And on the eve of its preparation for issuance, it was suddenly interrupted by a quick call of an emergency meeting here called by the Secretary of Agriculture and the timber groups were brought into Washington by telephone call and they were under instructions by telephone to call on their congressmen to express their concern about this upcoming Executive order.

Two of them who stopped me said we do not know what executive order, but that is what we are supposed to do, tell you not to accept it, to head it off; write a letter.

Well, the legions produced a great volume of letters and telephone calls from Members of both Houses to the Secretary of Agriculture. Try to knock off that executive order.

I will daresay that at least on our side over there nine out of ten had not the slightest notion of what was impending, but the job of killing the proposal was done. So that when we had the Secretary of Agriculture up before my subcommittee, he was asked why was that Executive order overturned. His response was very simple: "I have to tell you candidly, Senator, it was overturned because of your colleagues, you and your colleagues."

"As Secretary, I was besieged by the Members of the Congress," he said. The irony of it, of course, was that he was besieged by Members of Congress who were responding to constituents of various sorts who had been called by the Secretary of Agriculture's office to so petition in the first place.

All I am saying is that this was another case of pressure wrongly directed, in my judgment, at a policy that belongs to the people, not to an industry alone. It belongs in part to the industry with good use, but these are public lands, these are national forests.

My bill which, has been pending for a long time over on the other side, goes further than the bill you are considering here. I have in it a

2-year moratorium on clearcutting as well as this blue ribbon commission study recommended. I think that 2-year moratorium is important because there are still some clearcutting abuses going on. There would still be plenty of timbering activity; it puts nobody out of business. We specified in the bill that we would have respected all existing contracts. We simply would have called a halt to new ones for clearcutting only, for 2 years, while the study was being completed. That would take into account and make specific allowance for the special operations in the northwest where it was a particular problem otherwise.

We likewise offered to amend the proposal to absorb any individual that might have been conceivably unemployed by guaranteeing him 2-year employment with the National Forest Service to do replanting, because at that time the replanting schedule in the national forests was behind several years, partly because the Congress had been so tight with its purchases that it had not allowed sufficient funds. We all share this blame.

There is plenty of blame to go all the way around here, instead of putting the finger on any one group. It does point the finger to all of us in responsibility and we are charged to do something specific, something directive about this problem in a far more intelligent way than we have done until now.

This morning I was handed a new study from the Forest Service entitled "National Forests and Quality Environment." It is flattering to think it was rushed up to me just before this hearing because I think it is moving again in the right direction. We now have new leadership in the Forest Service, unencumbered, I trust, by the accumulation of events from the past, the accumulation of pressures, the accumulation of some mistakes, the accumulation of the stubbornness that sometimes occurs among us all when we meet a confrontation.

I will be darned if I am going to give in.

We all say we will come to the club, because we have been in that role some time or another. But we now have a chance for a fresh start, for proceeding with some innovative qualities here and now.

I have had occasion to speak to a number of our timber interests which, while that may seem amazing to some, it says a great deal about their willingness to talk. I think one of the better public relations opportunities that the industry had and kicked into the ashcan was an opportunity to endorse that proposed executive order last January. It did nothing to them to put them out of business. It did nothing even to encroach on what they were doing now. But they looked further down the road ahead and saw that it might ultimately block their access to some public lands for clearcutting. Therefore, they thought they ought to cut it off at the pass, I suppose.

That is their decision, but I return to my central thesis: These national forests belong to the people, not to some people, not to professional people, they do not belong to the Forest Service of the United States, they belong to all of the people, and we must strive to approach that stage of public policy.

The professionalism of the Forest Service has had to do with some of the science of trees, tree-farming, harvesting, and such but not the matter of public policy. Only you gentlemen and those of us in the other body have that responsibility and it rests heavily upon us.

So I join in applauding the efforts of Congressman Fraser and his colleagues who try to bring us to some point of recognizing the importance of a top level, blue ribbon commission to examine this whole question and come forth with recommendations in the interest of the people, all of the people, and the concept of public use by those people.

Thank you very much, Mr. Chairman.

Mr. FOLEY. Thank you, Senator McGee. You have certainly given eloquent and ample support for this proposed legislation which you have advanced in the other body over a period of many hears now. You are identified nationally as a principal proponent and champion.

We are delighted that you take the time to appear before the subcommittee to help us in the consideration of the pending bill.

Are there any questions of Senator McGee?

Mr. TEAGUE. No.

Mr. KYL. Yes.

Mr. FOLEY. Mr. Kyl.

Mr. KYL. Thank you, Mr. Chairman.

Some of you may be interested in one further coincidence in this getting together of the teacher and student. Because of the excellence of the teaching, unquestionably, while I was Mr. McGee's student I won an extemporaneous speech contest, the judge for which was a teacher by the name of Carl Mundt, who also is a Senator.

Senator, there are a couple of things that cause me to have some reservations about this "further study" proposition.

I concur in your motivation, but I am afraid that what we are doing here is creating a study as another means of postponing decision-making. It is my view that we have sufficient studies, we have probably concluded that when we review all of the studies we find that there is a sufficient science, a sufficient technology available to make decisions in specific areas where, for instance, in one case you have podsoil soil, in another case you have pyroclastic soil, you have windblown loess soil or alluvial soil.

We know that roads probably cause as much erosion as anything else in these forested areas. That is not included in this study.

In other words, if we could get, by some means, an agreement from the Forest Service that they would apply their multidisciplinary approach with the necessary backgrounds of technical studies in each instance, I think I would much prefer to start now to do that on a complete total basis rather than studying something to death again, because in all of this dialog I get the idea that maybe we want another study because we do not want to face up to what we know we ought to do.

Do you have any fear of that kind?

Senator McGEE. Yes, I have fears of that.

What gives me greater fear, however, is that several of those studies have been available for several years. Some of them are ancient history. We still fumbled along and stumbled into clearcutting abuses.

I agree that we should have known better. We had every reason to know better by what was available. What I would envisage in the blue ribbon commission is not the starting back from scratch in the laboratory and trying to arrive at new research conclusions, but to assemble and assimilate and integrate the expertise that is already running out our ears if we had let run in in the first place, and through

this process to develop a series of recommended restrictions, restraints, directions, guidelines, that have only spasmodically appeared and that have appeared very often in response to somebody's raising hell about it, rather than into initiatives that come from assembling the best of the research material that is now available.

It is that this has not been done, it should have been done 10 years ago, but we have learned a great deal in these 10 years. So what concerns me is something that would be sufficient to galvanize the determination to do this.

Now the Forest Service is beginning to make some noises about reforms. I seriously question whether the level at which a policy is required here is within the province of the Forest Service. The Forest Service is under tremendous pressures and has to respond to various kinds of pressures.

I was looking toward a commission that would be quite above these pressures, that would enjoy the luxury of being able to say, "This is what, if you lived in a vacuum, we ought to do idealistically on this thing. Here is where we ought to seek together. Here is how we ought to get there," with nobody breaking their ear telling them watch out for me, protect my interests.

As a result then submitting these proposals to the President and in turn to the legislative bodies for their considered action, because I would submit that in professional expertise the Members of this House and ours over on the other side of the Hill probably are better professionals at determining public policy than even the U.S. Forest Service, could cause some changes. So the reason I think what concerns you and what concerns me is that information has been available for a long time and it has largely gone unattended. That is the reason I see the need for a comprehensive study.

Mr. KYL. You know how our farmers resented the first Extension agents who came to them and told them they were going to teach them how to farm better. The farmers said, "Shucks, we do not farm now as well as we know how to." The Forest Service has known these these things for a long time.

I have a tendency to blame the Congress more than the Forest Service for anything that has gone awry because they have nothing to gain by any incorrect practices except from this pressure. That gets me to the second point.

You delineate the way in which the Members of the Congress, particularly the Members of the other body, how those actions upset an administrative decision which was about to be made.

Now this bill calls for a 17-member committee. Again, if we are going to have such a study, knowing what we know about the pressures, et cetera, I think I would much prefer to have this 17-member commission made up of impartial scientists without the benefit or the obstruction of Members of Congress, so that they could proceed to answer the questions which are technical and scientific questions rather than getting the political input into it.

Senator MCGEE. That to me is a reasonable reservation. I have entertained some thoughts that parallel that almost exactly; namely, that the expertise ought to be on the commission, unencumbered by the immediate pressures of a constituency, it ought to be a clean-cut look first.

But likewise, if it is to be achieved, there is plenty of room for a mix. I served on, in fact was responsible for setting up what turned out to be a very constructive varied blue ribbon commission on food marketing back in 1964, in which we had some of the finest Extension experts on the commission, deans of colleges of agriculture, professional cattlemen, consumer advocates, as well as—I think it was—three or four Members of the House, three or four Members of the Senate.

The blend was good for the politicians and the experts. It turned out to be a successful kind of operation. I do not think it has to be either/or here. I think there is room for both.

Mr. KYL. Get back from this point to the first one, I have now visited region 6 forest area where clearcutting is done ostensibly because of the species which is predominant, and I have seen what amounts to a little commission action of the kind we are trying to set up here on a broad national basis; included in the multidisciplinary team that examines the whole watershed are conservation experts, agronomists, wildlife people, sylvan culturists. When they develop from this mix of technical expertise a plan for harvesting the area, the clearcut area is severely limited.

You know what you are going to do this year, next year and 5 years from now and 10 years from now and 20 years from now. You apply, after whatever you cut, you apply the best forest practices that we have available today. In essence this is the kind of thing you try to set up nationally in this commission, but right now we know how to do this on a specific watershed by watershed basis.

I would much prefer, very frankly, that we apply this kind of expertise, which the Forest Service apparently accepts, in each case, taking into effect all of the local considerations.

Senator McGEE. Which it accepts now.

Mr. KYL. I am sorry.

Senator McGEE. Which it has accepted finally.

Mr. KYL. Well, again, I say, you know until this time, Senator, this Nation has always had a policy on its public lands of disposal; everything that has gone up to the present time has had a policy of disposal.

In this land use planning, which is out of our committee, the Senate acted, we reverse that policy. We say now the policy should be one of retention. It is a 180° turn. We call for classification of the lands so that we do use them for the best possible uses, with an eye to protecting them for the future.

I do not like to get on the back of the Forest Service here as being the culprit because the Forest Service has reacted to the legislative pressure over the years. It is the Congress ultimately that determines what the Forest Service is going to do.

We have to have an oversight function, of course, but I still have the idea that the Forest Service has known for a long time how to do the job better than they are doing it, but there have been some restraints and pressures which have kept them from doing it.

I have seen this. I have seen the mockups for the whole watershed, the scale model showing exactly what you do, with evaluation of each step before you proceed to the next step. If I could somehow make sure that the Forest Service is going to do this, henceforth in every operation, every sale, in every watershed in the country, I would much rather start there than to go back with another study which simply

might delay for 2, 3, or 5 years, the implementation, as you say what we want.

You make this statement, we should do something specific in a far more intelligent way. You cannot argue with that. I think we are ready to do that right now.

Senator McGEE. I hope you are right, Congressman, although I think the track record of the Forest Service has not been the greatest on this question.

As the Forest Service people would be the first to testify, I have been blindly committed almost, exuberantly committed, devoted to the professionalism of the Forest Service. We want to do that which will do it best, but I think when you inject the ingredient that goes beyond expertise on trees and goes into the matter of public policy, that that is not quite as easy to duck by passing that buck to the Forest Service.

I think they are beginning to make some of these changes. The unevenness of the change, the fact that it was really refreshing in one small area of the State of Washington, and then at the same time shocking to discover a contrast in a nearby similar watershed in the State of Oregon, is what keeps me deeply concerned on this as a matter of national policy.

The petitions I have had from the people in West Virginia on the Monongahela National Forest is another case in point. These public outcries continue to pour in. New Mexico is another one.

I do not have the absolute answer, John. I only believe that, because of the way we got where we are today, I am not satisfied that we are even doing this the right way. I am basically suspicious because of the reluctant way in which the policymakers had to be dragged into this now more modern position.

What I would like to know, and to be satisfied about, is that we are really doing everything we ought to be doing at this time. I do not think we have reason to be complacent about that. So I do not think a 2-year study stops anything. They have set out guidelines, let's keep going, but let's make this study and pull it together in one place.

The Borman and Likens study is absorbed by some, it has been ignored by others, unheard of by many more. The Bolle study has been only fragmentary in its utilization, and so on.

I think somewhere we have to pull all of these hopeful threads together and use them in exercising a judgment in behalf of public policy. I do not think that really all this has been done yet. I think it is a little bit more than the professionalism in regard to trees.

Mr. KYL. I share your concern. I think you also agree that the Forest Service will operate any way the Congress tells the Forest Service to operate.

Thank you, Mr. Chairman.

Senator McGEE. Yes.

If I might add, I am afraid in too many places I have also found the unconscionable heat on a forester in a local area, let's say, because of pressure that somebody wanted a new mill in there, and McGee gets busy and gets him a new mill so he can claim he found 32 more jobs so he can run on the next time, and they ended up to supply that new mill by clearcutting to do it.

That was a mistake I made, but I put the pressure on, and they responded. I am not above blame on this whole thing. I am as smeared by it all as anybody, but I think that entitles me to beg that we try to

get this up on a level that it requires, because there are some areas where it has been very skillfully done. But the performance has been too uneven and there is room for an across-the-board study.

The scientists that a staff of such a commission would surely have, the expertise that a staff would represent, would reflect the interconnection of these diverse kinds of studies and lessons that we have learned.

What happened in Wyoming certainly is not helpful on the coastal range in Washington or Oregon.

I think that we serve here in the Congress far better if we could put pressure on a conscious effort to tie all this research together, including the efforts of the Forest Service. The Forest Service alone, I think, is not quite free of hindrances at the level at which this question has surfaced, but I do appreciate your thoughts which you have given to this approach.

Mr. FOLEY. Senator, despite our little joking at the beginning of the hearing, as long as we are reminiscing a little bit, I first came to Washington about 11 years ago to work on the Senate staff, and of course had the pleasure of making your acquaintance then. I felt then as I feel now that you are one of the very distinguished Members of that great body and certainly one of the most able, articulate, and that overworked word these days, "committed." Certainly your concern about this problem and the protection of our great forestry services does you credit and is again illustrative of the public concern which you have always demonstrated.

We are delighted that you could come this morning, and with the background that you have on this subject, the bills you have introduced and the participation you have had in the other body, you have made a very real contribution to our deliberations.

Thank you.

Senator McGEE. Thank you very much, Mr. Chairman. I appreciate the courtesy of the members.

Mr. FOLEY. The next witness will be the distinguished author of H.R. 14354, the gentleman from Minnesota, Mr. Fraser.

We are of course happy to welcome our colleague.

STATEMENT OF HON. DONALD M. FRASER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr. FRASER. Thank you very much, Mr. Chairman. I want to thank you and the members of this subcommittee for holding this hearing.

I am also grateful for the opportunity of listening to Senator McGee's testimony. I think he has laid a good foundation showing the need for this study.

I might add that the bill, as you know, originally provided for a study and moratorium on clearcutting.

The bill now before the subcommittee calls for an 18 months' study by a 17-man commission appointed by the House and the Senate, essentially a congressional study commission.

Mr. Chairman, I know that you have a number of witnesses, many of whom will bring more professional knowledge to this hearing than I can, so with the permission of the chairman I would like to submit

my statement for the record and comment on several aspects of the problem.

Mr. FOLEY. Your statement will appear in full in the record.
(Statement follows:)

STATEMENT OF HON. DONALD M. FRASER, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF MINNESOTA

Mr. Chairman and Members of the Subcommittee, I have come here this morning to urge support for H.R. 14354 which establishes an independent 17-man commission to study and report on the practice of clearcutting on public lands. There has been much concern expressed recently about timber-cutting practices in our National Forests. This concern has centered on the even-aged system of forest management known as clearcutting.

In the past decade we have begun to realize that our natural resources are finite. Public concern has been aroused by stepped-up harvesting of the timber resources of our National Forests and by increased, and sometimes injudicious, use of clearcutting.

When the Forest Service was created in 1905, almost 95% of the lumber cut in this country came from private lands. Today, about one-third of the timber produced in the United States is harvested on federal lands. Over 50% of this is harvested by clearcutting. In the '60's, there was a swing in the Eastern hardwood forests from selection cutting and shelterwood cutting to clearcutting. Mechanization also has tended to encourage clearcutting.

In 1970 almost 173 million visitor days were recorded in our National Forests. These visitors saw for themselves the disregard for aesthetic values that can occur in a logging operation.

Citizens and conservation groups have charged the Forest Service with overcutting and with violation of the Multiple Use-Sustained Yield Act of 1960. In the past two years, three in-house reports by the Forest Service and two independent reviews have revealed serious deficiencies in management and an overemphasis on production goals in the following National Forests: the Bitterroot in Montana, the Monongahela in West Virginia, and the Bridger, Teton, Shoshone and Bighorn National Forests in Wyoming. In these forests, areas of 1000 acres or more have been stripped bare, on terrain with poor possibility of regeneration.

On steep slopes, clearcutting can seriously damage the soil. Rains wash top soil, humus and litter into streams, polluting them and hurting fish life. Flooding can result when clearcuts extend over large areas.

Recreation values are lowered. Even under ideal circumstances (on level land where there is no problem of soil erosion), clearcutting ruins scenery for a few years at least. Logging roads, debris, and stumps take the place of green forest.

There is no question that clearcutting is the most profitable way of harvesting and raising the most commercially valuable species of trees. Whether it is always the most economic way in the broader social sense is open to dispute.

In some areas of the country, like my own state of Minnesota, almost all timber is harvested by clearcutting—87% in northern Minnesota. After the centuries-old white-pine forests were levelled in the last century, new forests sprouted. The species that thrive there—aspens, jack pine, red pine, black spruce, tamarack and paper birch—are precisely the species which professional foresters agree need to be clearcut. Aspen in particular requires full sunlight for successful regeneration.

There has been some dissent, however, with current practice. Citizen groups in Minnesota have questioned the logging going on in northern Minnesota's unique wilderness, the Boundary Waters Canoe Area. And a few professional voices have been raised in defense of shelterwood cutting of jack pine and tamarack.¹

Senator Metcalf, Senator Randolph, and Senator McGee were instrumental in getting investigations of forest management in the Bitterroot, the Monongahela, and the Bridger National Forests. Subsequently the Forest Service made some modifications in timbercutting in these particular forests. Senator Randolph, however, has expressed disappointment at the results in the Monongahela, where he says that little in fact has changed.²

Last year the Council on Environmental Quality commissioned the deans of five forestry schools to survey clearcutting in their respective geographic areas. These reports were completed last summer. There was general agreement among

¹ E. W. Caveney, Jr., and V. J. Rudolph, "Reproducing jack pine by the shelterwood method," Mich. State U. Ag. Exp. Sta. Rsch. Rept. 110, 1970.

² *New York Times*, February 29, 1972, letter to the editor.

them about the economic advantages of evenaged management. They agreed, too, that of the three methods of evenaged management—clearcutting, shelterwood cutting and seed cutting—clearcutting gives the greatest economic returns. There was also agreement that for most species, selection cutting is wasteful and for some species (like aspen), it simply does not work.

One of the five deans said the disadvantages of clearcutting were primarily aesthetic. But he added that evenaged stands generally do not provide as much resistance to injury from wind, snow, glaze, insects and disease as unevenaged stands do. "Other disadvantages of evenaged management," he concluded, "are usually the result of misapplication or poor judgment; they are not inherent in the system."³

After receiving these reports, the Council on Environmental Quality drafted an Executive Order that would have limited clearcutting on public lands. This Order would have prohibited clearcutting in areas of scenic beauty or where soil erosion might occur or where quick regeneration was unlikely. All this seems so eminently mild and reasonable, it seems impossible that anyone could object. But the timber industry did not like the proposed Order, nor did the Department of Agriculture. And so the President abandoned it.

It is reasonable that the lumber industry wants to protect its own interests. Understandably, the ties among Forestry Schools, the industry and the Forest Service are close, and that makes objectivity difficult. No one condones *tree-mining* but it still goes on. We need objective restrictions against *tree-mining*. We also need an objective view of how much *tree-farming* should go on, on public lands. Too frequently short-term profits win out over long-term economic and aesthetic public interest.

We needed those Presidential guidelines for clearcutting on public lands, and now we need an objective, independent study commission to get them. To give these guidelines the weight and authority they must have, we need more scientific information of the kind that an independent study commission can provide.

While there is agreement among professional foresters on the economy and efficiency of evenaged management, there are important differences of opinion about the preference given to the three evenaged methods of cutting. There are differences of professional opinion as well about the effect of clearcutting on nutrient cycling, on watershed values, and on wildlife management.

On wildlife management.—On the one hand—wildlife and game habitat generally improves following clearcutting.⁴

On the other hand—"clearcutting [poses the] most serious threat to wildlife that we face today."⁵

On the bark beetle problem.—Professional foresters agree that clearcutting eliminates bark beetle problems.

But, according to a professor of Forest Entomology, "Clearcutting as a matter of fact creates bark beetle problems. And there is published data . . . to show this."⁶

On Europe's experience with clearcutting.—"Even aged management . . . a very efficient timber growing system . . . has been successfully used in Europe for many generations."⁷

But on the other hand: After many generations of evenaged stands in central Europe, productivity has declined and consequently there has been a move toward mixed stands. In Germany under this mixed system, "yields have increased and forest land has improved."⁸

On selection cutting.—On the one hand—Selection cutting is the desired method of cutting for northern hardwoods.⁹

On the other—Selection cutting for northern hardwoods is a "sacred cow."¹⁰

³ Lee M. James, "Clearcutting in the Public Forests", July 21, 1971, Chap. I, pp. 8, 9.

⁴ Prof. Kenneth P. Davis, President of the Society of American Foresters, at Senate Appropriations Hearings, April 17, 1970.

⁵ Charles D. Kelley, Alabama Fish and Game Director, *Congressional Record*, March 28, 1972, pp. S4891-3.

⁶ Donald Dahlsten, Senate Interior Public Lands Subcommittee Hearings, April 7, 1971, Part 2, p. 646.

⁷ W. W. Ward, "Clearcutting in the Hardwood Forests of the Northeast," prepared for CEQ, June 30, 1971, p. 7.

⁸ Kenneth B. Stocking, Senate Interior Public Lands Subcommittee Hearings, April 1971, pp. 633, 4.

⁹ F. H. Eyre and W. M. Zillgitt (1953), "Partial cuttings in northern hardwoods of the Lake States . . .", USDA Tech. Bulletin 1076.

¹⁰ L. S. Hamilton (1962), "Northern Hardwoods and the selection system—a 'sacred cow' situation?", *N.Y. Forester*, XXIX, 4.

There is a consensus, however, on the need for further research. The Senate Interior Public Lands Subcommittee reported that everyone, "including the Forest Service," agrees that additional research is desirable.¹¹

This is particularly true of nutrient cycling. One Forestry School dean reports that "little is known about the impact of clearcutting on available nutrients for regeneration."¹² A professor of Environmental Geology alarmed the Senate Interior Public Lands Subcommittee by predicting that soil in our northwest would be "sterilized" in the next twenty years if we continue current forest management practices. "Very few people," he testified, "have begun to look to the problem of soil depletion, especially chemical depletion."¹³

Natural scientists cite the need for further study of the effect of clearcutting on wildlife management. A professor of Forestry writes that most wildlife studies deal with big game species like deer and elk. The effect of clearcutting on other animal and bird populations has hardly been considered at all.¹⁴

The independent study commission proposed in H.R. 14354 would consider these problems in detail and in depth. The question I would hope to see resolved by this study is not whether we allow the practice of clearcutting, but where it is practiced, and how, and when, and to what extent.

There have been voices in the Forest Service and the timber industry that seek to minimize and to dismiss as a passing fad the new public concern for our forest lands. According to former associate U.S. Forest Service Chief Arthur Greeley, "Public opinion is a fickle guide."¹⁵ And in its report on "Forest Management in Wyoming," the Forest Service refers to "the winds of public opinion."¹⁶ Dean Bethel in his report to CEQ remarks: "Most forest management decisions are in their very nature long-term decisions whereas public attitudes and public policies responsive to these attitudes may change on much shorter time cycles."¹⁷

It is precisely because decisions and mistakes in our National Forests have long-lasting consequences that the public is worried. Environmental concern is not a passing whim. We may be late in coming to it, but it is here to stay. It is a major concern, a necessary concern—perhaps the overriding concern.

Mr. FRASER. Let me say first of all that the problem is centered in the large national forests, some of which Senator McGee talked about, the Bitterroot in Montana, the Monongahela in West Virginia, and the Bridger, Teton, Shoshone, and Bighorn National Forests, in Wyoming.

We have some problem in Minnesota, but it is not acute. In many of the timber stands in Minnesota, clearcutting is an appropriate way of harvesting.

We are concerned here with the national issue, not just the problem in Minnesota, but one that affects the entire Nation. It affects it I think because of a divergence of interests—the economic interests of the lumber industry and the increasing demand for recreation.

In 1970 there were 173 million visitor-days recorded in our national forests. The surging demand for recreation and for access to wilderness areas is putting our present resources under great strain. We have this interest to consider.

We now have a new understanding of the larger problems of the environment. I must say I share the disappointment that many felt when the proposed order from the Council on Environmental Quality was not permitted to go into effect. If there is any one thing that has

¹¹ Clearcutting on Federal Timberlands, Report by the Subcommittee on Public Lands to the Committee on Interior and Insular Affairs, U.S. Senate, March 1972, p. 8.

¹² Robert E. Dils, "Clearcutting in the Forests of the Rocky Mountains," prepared for CEQ, July 1971, p. 40.

¹³ Robert R. Curry, Senate Interior Public Lands Subcommittee Hearings, April 1971, p. 161.

¹⁴ Dils, *op. cit.*, p. 27.

¹⁵ *An Analysis of Forestry Issues in the First Session of the 92nd Congress*, Senate Committee on Interior and Insular Affairs, April 1972, p. 6.

¹⁶ *Ibid.*, p. 25.

¹⁷ James S. Bethel, "Clearcutting as a Forestry Practice . . . in Alaska, Washington, Oregon."

happened, it seems to me that this failure of the Executive branch to act indicates the importance of the proposed study.

I agree with Senator McGee that no matter how professional the administration of these forests, there are larger public concerns that will be attended to only through some kind of congressional action. This is why we like the idea of a study commission that involves Members of Congress. In some ways Members of Congress are the last remaining generalists of the world. We can, and must, be the integrating focal point for environmental concerns and recreational demands, as well as for economic and forestry considerations.

Mr. Chairman, I would like to make the point that there are many disagreements at the moment on technical issues. I listed a number of them on page 4 of my statement.

We get conflicting statements on wildlife management. On the one hand it is said that wildlife and game habitat generally improves following clearcutting.

On the other hand—clearcutting poses the most serious threat to wildlife that we face today.

I have footnoted the sources of these statements.

Again, professional foresters agree that clearcutting eliminates bark beetle problems. But, according to a professor of forest entomology, "Clearcutting as a matter of fact creates bark beetle problems. And there is published data * * * to show this."

As far as the European experience is concerned, it has been alleged that clearcutting has been used successfully in Europe for many generations. But it is also said that after many generations of evenaged stands in Central Europe, productivity has declined and consequently there has been a move toward mixed stands. In Germany under this mixed system, yields have increased and forest land has improved.

There are disagreements in this area and I am not suggesting that a congressional commission, even with the professional members who would be added, could solve all of these problems. But it could identify I think, the areas of uncertainty and help sponsor or stimulate more research. Most important of all, the proposed commission could integrate the concerns that have to be dealt with at a public policy level, which the Forest Service, as a professional service is not prepared to deal with.

Mr. Chairman, I would seriously urge the subcommittee to consider a study. You may want to draft your own bill for the purpose but I would hope that we could make some move in this direction.

Thank you.

Mr. FOLEY. Thank you very much, Mr. Fraser.

Questions?

Mr. KYL. One question.

This goes back again to the second part of the matter discussed with the Senator. On page 3 of your statement—I will read the full statement—you say next to the last paragraph: "We needed those Presidential guidelines for clearcutting on public lands, and now we need an objective, independent study commission to get them." The sentence is not a very objective statement as a matter of fact. Further, you say this: "The question I would hope to see resolved by this study is not whether we allow the practice of clearcutting, but where it is practiced, and how, and when, and to what extent."

If you were to remove one of those two sentences from your statement, which one would you remove?

Mr. FRASER. I am not sure that I see the conflict.

Mr. KYL. I interpret your first sentence on page 3, as saying, I know what we need, and we ought to get a study approved on what we need.

Mr. FRASER. I see. I think perhaps the latter phrase might be amended. I guess what I really feel is that we should have a commission to deal with public policy questions, with the interests of the American public in totality. You don't get this from technical sources. We have to decide what it is we want to do with the forest resources in the United States and how we are going to manage our national forests—although certainly there are technical questions involved.

Maybe I should amend that phrase. You have a point.

Mr. KYL. Thank you.

Mr. FOLEY. Any other questions?

If not, this does raise a point, this last question. Commissions of this kind perhaps have had two purposes: One, to assemble technical information and the other is admittedly in many cases to try to bring to focus a public policy and perhaps some pressure on the area of discussion.

I have been concerned personally, however, that sometimes when we do establish commissions there is, as the gentleman recognizes, some impatience or lack of credibility in the Congress about establishing more commissions. Sometimes the recommendations made, by presidential or other important commissions, have not been carried out. At other times the commission's report has been greeted with flat rejection. Most recently the conclusions of the Commission on Marihuana and Drug Abuse, the Commission on Population and the American Future, and the Commission on Pornography, have been rejected by the President. To mention another problem with commissions: How do we integrate a commission's findings with public policy?

Mr. KYL. Would the gentleman yield?

The thing I worry about is this: I have a colleague who shall remain nameless who always dislikes appropriating money for pure scientific research because he does not know what it is they are looking for.

Mr. FRASER. There is something to that. What we are proposing is essentially a congressional-based inquiry. To the extent that Members of Congress actively participate—which one would hope they would—this inquiry could add to the knowledge this subcommittee already has and could integrate the public's concerns in a broadly based public policy.

Mr. FOLEY. There have been other commissions that have had a direct impact. The Public Land Law Review Commission is one that has definitely had legislative impact. Again we want to thank you, Mr. Fraser, for your appearance today in support of your bill.

Your cosponsor, Mr. Dow, and you, too, have certainly given us a helpful insight into the background of the proposed legislation.

Mr. FRASER. Thank you very much.

Mr. FOLEY. The next scheduled witness is the cosponsor of H.R. 14354, Mr. Dow of New York. Mr. Dow is not able to be here. His statement will be included in the record in its entirety.

STATEMENT OF HON. JOHN DOW, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Late in the nineteenth century, with the advent of the national forest system, we slowly began recognizing the need to conserve rather than totally exploit our forests. The system of national forests today has over 10 million acres set aside from commercial development, and 97 million acres of commercial timberland. These commercial lands are managed under the "multiple-use" doctrine which provides that the use of these lands shall be balanced between commercial and recreational needs.

The practice of clearcutting—the taking of all timber within a designated area for commercial use—is clearly a practice which needs close scrutiny. It raises serious economic and environmental questions.

The purpose of the legislation I am supporting, H.R. 14354, is to answer some of these questions.

Is clearcutting a proper method of silviculture that will preserve and enhance our forests?

Are there other tree harvesting methods which will avoid the gross denudation of national forests and the unsightly stumps and roads that follow in the wake of clearcutting?

Is timbering in the national forests necessary? We are constantly warned of a lumber shortage, but this does not square with the fact that a great deal of lumber is exported from the United States every year.

What are the economics of lumbering in the national forests? How does the cost compare with tree farming on privately held lands?

Are privately held timber lands in the U.S. being used fully and efficiently at the present time?

What are the future lumber needs of the U.S., and are there other natural resources, which can be extracted from the earth without harm to the environment, which can meet our building and construction needs?

What is the relationship between tree harvesting and soil conservation? Will cut over land be rapidly depleted?

What is the impact of clearcutting on wildlife?

What are the other environmental consequences of clearcutting such as erosion or siltation of streams?

The legislation provides for an 18 month, \$2.5 million study of clearcutting to be conducted by a seventeen member commission. The commission will be composed of five Senators and five Congressmen to be appointed by the presiding officer of their House. The remaining seven members will be appointed jointly by the presiding officer of both Houses according to the recommendations of the majority and minority leaders. These must have two timber industry representatives, two conservation representatives, and from the academic community, there will be one forestry expert, one ecology expert, and one social science expert.

The requirements for diversity among the interests represented by the members of the commission should create a balanced and impartial study. I am not wedded to every detail of the Commission's membership, but I would hope that the structure is such that (1) no political party will have dominance; (2) no special interest will have dominance; and (3) all "users" of the national forest system are represented as well as those who are learned in the study of man's relation to his environment.

The proposal as written has another interesting and useful aspect. We have seen in recent years an increasing tendency for Commissions to be created, usually in the Executive branch, only to have their recommendations completely disregarded. This Commission would be solely a creature of the Legislative branch; it is appointed through the leadership of both Houses with guaranteed involvement by the minority party, and it reports to the Legislative branch. This will afford Congress a fine opportunity to prove that study Commissions are a useful tool in the creation of public policy, and not merely a pigeon-hole for hot issues. The requirement that all interests be represented guarantees that the findings of the Commission will not be a foregone conclusion before they even begin their work.

My own belief is that the practice of clearcutting raises serious questions of public policy.

There was a time when we, as a nation, looked to our natural resources as the proper subject of exploitation. Every river was a source of water for irrigation, a force to drive the engines of industry, a convenient depository for our garbage and waste, as well as a provider of food and recreation. There obviously comes a time when these multiple uses overlap and conflict. We have, in the past, regarded

forests as a source of timber and place where homes could be built or a farm could flourish. On and under the extensive lands of our nation, we looked for all it could provide in terms of food, water, minerals and transportation. With so much wilderness around us it is not surprising that we regarded the need to conserve this primitive environment as trifling. "Undeveloped" land sold for pennies an acre, while "developed" land brought the highest of prices.

Some people can see little or no value in a virgin forest. They see trees in terms of oats or barley, another crop to be harvested. They don't see bark and leaves and solitude, but only board-feet that translate into dollars and cents. Some have even gone so far as to say that those who want to preserve the forests in their natural state are greedy and selfish. They say that nature lovers would monopolize the forests for a few at the expense of many. I find this difficult to comprehend. Camping and hiking are one of the most inexpensive and easily accessible forms of recreation available in this year of 1972.

Today we have a new sensitivity to our environment and the delicate balance that is struck between man, as a biological organism, and the entire universe of living things. Wilderness is no longer all around us; the signs of men's industry—his roads, factories, farms, junkyards and houses—are now more pervasive than the wilderness we have, in fact, conquered. We now realize that there must be limits to our growth and consumption if we are to have even a vestige of our natural heritage left—indeed, if we ourselves are to survive. More than survival, we must assure that there is a high standard for the quality of human life in a world that is increasingly dominated by science and industry.

What is the value of a wilderness? It can be a place where a person can escape from the clamor of the city. A place where a person can meditate and find solitude. A place where a person can be free of all the barriers we have erected between ourselves and the elements and be at one with the environment that spawned us. It is a natural laboratory where we can study the forces of life and the balance of nature free from the effects and signs of man's domination. It is standing symbol of our heritage, a living remnant of the past.

We have children in our cities who have never seen living creatures except cockroaches, flies, dogs, cats, rats, starlings and pigeons and whatever they might see on television. The future of these people must be given thorough consideration in addition to the industrial needs of the nation.

No one should have anything to fear from an impartial commission to study the practice of clearcutting. It will give us the information we need to make a decision on the future of our national forests in a debate that has often generated more heat than light.

Mr. FOLEY. The next statement will be given by John McGuire, Chief of the U.S. Forest Service.

**STATEMENT OF JOHN R. MCGUIRE, CHIEF, FOREST SERVICE, U.S.
DEPARTMENT OF AGRICULTURE**

Mr. MCGUIRE. Thank you, Mr. Chairman.

Mr. FOLEY. Mr. McGuire, this is the first opportunity that I have had to welcome you officially before the subcommittee in your new responsibility as Chief of the Forest Service. Needless to say, we are very happy to have you here with us this morning and look forward to hearing from you in the first of many appearances.

Mr. TEAGUE. I would like to join the chairman in his remarks and state further that I have known Mr. McGuire for some years and found him not only very competent but always very cooperative in working out problems that we have had come before us. I am sure that he will do a splendid job in his new assignment.

Mr. FOLEY. Thank you.

Mr. MCGUIRE. Thank you, Mr. Chairman and members of the committee, for this opportunity to present the views of the Department of Agriculture on H.R. 14354. With your permission, I will brief my statement.

(The statement follows:)

STATEMENT OF JOHN R. MCGUIRE, CHIEF, FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE

Mr. Chairman and members of the committee: Thank you for this opportunity to present the views of the Department of Agriculture on H.R. 14354.

H. R. 14354 would establish a 17-member Interdisciplinary Clearcutting Practice Study Commission to conduct a study and investigation to determine whether it is in the best interests of the United States to permit the practice of clearcutting timber on Federal lands and, if so, to determine the best way to carry out such practice. Within 18 months the Commission would report its findings and recommendations to Congress.

The Department of Agriculture supports the objective of a continuing review of timber harvesting practices, including clearcutting. In recent months the Forest Service has undertaken major studies of timber harvesting techniques, with emphasis on clearcutting practices. These included specific and regional timber management and harvesting studies involving the Monongahela National Forest in West Virginia, the Bitterroot National Forest in Montana, and a Task Force study of timber management in four of the National Forests in Wyoming.

Additionally, the Forest Service made a nationwide review of National Forest timber management practices that identified specific timber management and related problem situations and suggested responses to those situations. We have adopted a number of changes in policy and practices that were suggested in the report.

Independent studies have also been made of timber management practices on Federal forest lands.

The Bolle report, *A University View of the Forest Service*, was researched and written by six faculty members of the School of Forestry of the University of Montana. They examined multiple-use management on the Bitterroot National Forest. The West Virginia Forest Management Practices Commission conducted a similar study of the Monongahela National Forest. Many of the recommendations from these independent studies, together with Forest Service study team recommendations, have been incorporated into a Forest Service action plan.

Further, the Council on Environmental Quality requested five university forestry school deans to each prepare a report commenting on clearcutting and related timber management problems. Each forestry school dean saw the practice of clearcutting as an acceptable forestry tool. Likewise, each dean recounted instances where clearcutting had been misapplied and presented detailed criteria for proper application.

After extensive hearings and review of clearcutting practices last year the Subcommittee on Public Lands of the Senate Committee on Interior and Insular Affairs suggested policy guidelines for timber harvesting in a recent Subcommittee Report—"Clearcutting" Practices on National Timberlands, 92d Congress, 2d Session. Two of the four guidelines relate specifically to the use of clearcutting as a harvesting technique and include the necessity of a multi-disciplinary review of the potential impacts. Another of the guidelines emphasized the need for obtaining an adequate research base for making timber management decisions, including when and where to clearcut.

The Forest Service recognizes the guidelines as a clear expression of Congressional and public concern. The guidelines are technically sound and represent a desirable and constructive policy statement for future National Forest System management. The Chief of the Forest Service, in a letter dated April 3, 1972, assured the Subcommittee the guidelines would be reflected in Forest Service guidelines and directives for planning new timber sales. The Forest Service action plan to accomplish this has been distributed to the field. We understand the Director of the Bureau of Land Management in a letter of April 8, 1972, has given the Subcommittee similar assurances.

On September 2, 1971, the President announced the appointment of the new Presidential Advisory Panel on Timber and the Environment to study and advise the President on the entire range of timber management and environmentally related problems, including clearcutting. The Panel is expected to report later this year.

Because of these comprehensive and wide ranging recent studies and activities, we think it would be most productive to get on with the job of putting the positive recommendations we have into effect. Authority for a formal study as proposed by H.R. 14354 is not necessary.

Under existing authority, we will continue to review timber management practices along with other interested groups and individuals to assure that we have adequate and useful information on its environmental impacts.

Accordingly, we believe the study proposed in H.R. 14354 is not needed at this time and recommend that the bill not be enacted.

This completes my prepared statement. I will be glad to try to answer any questions you have.

Mr. McGUIRE. The Department of Agriculture supports the objective of a continuing review of timber harvesting practices, including clearcutting. In recent months the Forest Service has undertaken major studies of timber harvesting techniques with emphasis on clearcutting practices.

Independent studies have also been made of timber management practices on Federal forest lands. The report written by six faculty members of the School of Forestry of the University of Montana examined multiple-use management on the Bitterroot National Forest. The West Virginia Legislature's Forest Management Practices Commission conducted a similar study on the Monongahela National Forest. The Council on Environmental Quality requested five university forestry school deans to each prepare a report commenting on clearcutting and related timber management problems.

The Subcommittee on Public Lands of the Senate Committee on Interior and Insular Affairs has suggested policy guidelines for timber harvesting in a recent subcommittee report.

The Forest Service recognizes the guidelines as a clear expression of congressional and public concern. The guidelines are technically sound and represent a desirable and constructive policy statement for future national forest system land management. The Forest Service has prepared an action plan to accomplish carrying out of these guidelines and that plan has been distributed recently.

On September 2, 1971, the President announced the appointment of the new Presidential Advisory Panel on Timber and the Environment to study and advise the President on the entire range of timber management and environmentally related problems, including clearcutting, and is expected to report later this year.

Because of these comprehensive and wide-ranging recent studies and activities, we think it would be most productive to get on with the job of putting the positive recommendations we have into effect.

Accordingly, we believe that the study proposed in H.R. 14354 is not needed at this time and recommend that the bill not be enacted.

This completes my statement and I will be glad to answer questions.

Mr. FOLEY. Thank you, Mr. McGuire.

Questions?

Mr. TEAGUE. I have one.

Mr. McGuire, do you believe that if such a commission were appointed consisting of 17 members there might be some difficulty in arriving at anywhere near a unanimous opinion for a set of recommendations?

Mr. McGUIRE. I think that is a fair prediction, Mr. Teague, because in any such commission you are going to have different points of view. Some will give more emphasis to one aspect and some to another. It will be difficult to be unanimous.

Mr. TEAGUE. That is one of the difficulties that I see. In my capacity as a member of the Veterans' Affairs Committee, I served on a committee having to do with a study of interest rates in general and I think there were 15 members of that commission and I think there were 15 different points of view and we had great difficulty in arriving at anywhere near a majority set of recommendations.

Thank you.

Mr. FOLEY. Mr. Burlison.

Mr. BURLISON. Thank you.

Mr. McGuire, do you know what percentage of timber harvested from the public lands is by clearcutting?

Mr. McGUIRE. In terms of acreage it would probably be about 35 percent of the acreage. In terms of timber volume it would run 50 percent or more. It varies from place to place.

Mr. BURLISON. Is this percentage comparable to what we would find in private areas?

Mr. McGUIRE. I think the percentage of clear-cut acreage would be somewhat higher in private lands than public lands.

Mr. BURLISON. Thank you very much.

Mr. FOLEY. Mr. Kyl.

Mr. KYL. Thank you.

To follow through on that point for a moment, is one of the major considerations leading to this large clear-cutting volume predicated on the necessity and the problems associated with forest roads?

Mr. McGUIRE. Yes. To get the same volume from a partial cutting system of harvesting of timber you would need more roads than you would require to get the same volume from a clear-cutting system.

Mr. KYL. Is it true that at least a sizable percentage of whatever erosion occurs through the road building rather than actual forest practice? A good percentage we will say?

Mr. McGUIRE. That is correct. Roads are usually the principal source of erosion and not the logging operation.

Mr. KYL. Of course, the road that remains detracts from the primitive atmosphere?

Mr. McGUIRE. Yes, sir.

Mr. KYL. The only way to build a road is by clearcutting that stretch which you need for a road?

Mr. McGUIRE. It is usually the case unless you build a primitive road that winds among the trees. Usually you cannot do that.

Mr. KYL. In a little more critical area, you are aware of the fact that I visited perhaps more than 25 national forest areas in the last calendar year with a concentrated effort on six. In your statement you say that these guidelines offer a sound basis for future management of the forests. Can you also say that they offer a sound basis for present management of the Forest Service?

Mr. McGUIRE. Yes; we can say that, Mr. Kyl. Of course they do, especially the planning aspects of management. Many of the guidelines are directed toward the use of multidisciplinary techniques of planning. That is part of management.

Mr. KYL. In that Douglas-fir area of the Northwest you have set arbitrarily a limit on the size of the clear-cut area; have you not?

Mr. McGUIRE. It varies from type to type and place to place. In general, the clear-cut areas in the Northwest now being planned for run 40 acres or so, as I recall.

Mr. KYL. Or less?

Mr. McGUIRE. Or less.

Mr. KYL. Thank you, Mr. Chairman.

Mr. FOLEY. Thank you very much.

Mr. Baker.

Mr. BAKER. Thank you, Mr. Chairman.

I apologize for coming back late. I had to testify before another subcommittee of Agriculture which was important particularly to my district.

I scanned your statement here and I am concerned about the evaluation which the Forest Service makes on the purpose of our national forest system, whether it is for timber production or for public enjoyment.

Mr. McGUIRE. Mr. Baker, we attempt to carry out the policies established by Congress. One of the principal sets of these policies is in what we call the Multiple Use and Sustained Yield Act. In that act Congress directed us to manage these forests for a combination of uses, among which were timber, recreation, as well as wildlife, watershed protection, and range forests.

We are also asked to provide for wilderness. We are trying to find the combination to reach the most satisfactory array of goods and services on these lands. At any one time we get some changes in signals from the policymakers and it takes time to put new policies into effect. For example, the typical timber sale may be in the preparation stage for a number of years and then the timber purchaser may take several years to actually harvest the timber, so you are talking usually of a lag of 5 or 10 years.

We got signals early in the sixties, for example, that we should give much more attention to esthetics. We proceeded at that time to increase the employment of landscape architects. We had a few. We added to the number and now we employ more landscape architects than any other organization. Nevertheless, this has taken about a decade.

There are other examples of this nature, so some of the results that we might expect to show up immediately because of the nature of the situation cannot appear for a number of years.

Mr. BAKER. My concern is centered basically in my district on the Cherokee National Forest portion which is in Polk County, Tenn., and I went into that area a week or 10 days ago with about a dozen individuals who are members of an environmental group, as well as the ranger who was most familiar with that area. I saw some areas which had been clearcut and the result to me was distressing.

I don't know much about the policies. I am not an outdoorsman. I was there to observe, so there were things that existed which I could only understand as maybe a tourist would understand in traveling through.

I saw some areas in that small forest which were described to me as one of 89 acres in size. Another was described as over 100 acres, but I don't actually know what size they are. There was a great mass of dead trees left that had not been removed, and the indication was they would not be removed. It was all brush and stumps. And I was told again in that forest there are probably 60 species which grow in the natural environment. I was also told that the hardwoods were being poisoned and an effort was being made to convert this forest to a stand of pine which grows faster and is more readily marketable to our paper mills as an outlet for pulpwood. This concerned me. These areas had been cut one, 3 years ago, and some more recently, and others are marked for bids, I was told, by the signs on the trees, for cutting.

I don't know exactly where I was, but we went over a mountain and into a valley and back over another mountain and back. I know the general area on a map, but had no idea where I was going precisely until I wound up at a community with the unique name of Greasy Creek. What I saw concerned me, and maybe you could comment on it. It seemed to me if we are going to clearcut, this was far too large an area to cut in that small forest.

Mr. McGUIRE. Mr. Baker, we appreciate your taking the time to look at this problem on the ground. You have made some excellent points about various aspects of the problem. The size of the clearcut is indeed a factor, particularly from the esthetic point of view, and I am sure that the Cherokee Forest now in its newer sale offerings has reduced the size of clearcut openings to perhaps in the neighborhood of 35 acres or less. As I recall, the acreage they are using as an upper limit is about 50 acres. The disposal of debris is a great concern to us. The forest you are talking about was acquired from private ownership. It has been cutover very likely at least once. All the better trees have been taken out and what is left behind has been the culls and trees that are defective or that are not putting on much growth.

If you are going to manage these lands for timber production you somehow have to free this growing space for new trees. This is one of the reasons for deadening cull trees. However, in doing that we want to be sure that we leave enough trees for wildlife purposes, den trees, for example, or mast trees. We also do not want to convert the entire forest or even a major part of it to one species such as the pines. The pines were once a common component of those forests, I am sure. They grow there naturally but they have been cut out over the years. I think there is some merit in restoring pine to some of the forests. We are certainly not going to restore pine to all of them. We will do what we can to improve the appearance of these areas wherever it can be done.

We are a little more fortunate in Tennessee because the slash breaks down quickly and returns to the soil. In parts of the dry West it is more of a problem because it hangs on for a long time.

Mr. BAKER. One of these areas which had been cut for 3 years still contained a considerable amount of brush, enough to be of particular concern to me, because I asked the question of how long it had been since it was cut. They showed me some other areas which had been selectively cut and that portion of the forest was pretty clean. I was told a number of the loggers would prefer to selectively cut rather than bringing big machinery in which tears up the land because we have some pretty steep areas on which to work.

In fact, when we are talking about clearcut areas we should keep in mind those knolls where it is too steep to go. This leaves little strips of timber within an area which has been clear cut all around. When this is done, we say we have 25 acres here and 25 acres here and 25 acres back here, and so forth, when in reality we have a total clearcut area for the simple reason they couldn't get to the other little strips that divided these parcels.

One person who worked for the Forest Service 5 years pointed out the considerable damage to leaves by insects which have multiplied over the years. His explanation was that with the hardwoods gone and return of the pines that the birds were gone, too. So there is no

natural control of the insects and they will continue to inflict damage on the foliage.

Again, I am just listening to persons who have spent their lives and are interested in the woods, in enjoying, being there for the personal pleasure it is to them. They talk about food for the animals and the ranger talked much about the food for the deer. He told about the knolls that were necessary and the fresh vegetation, but he said nothing about the food that was necessary for all other wild animals.

When I was confronted by one of the men in the group in this respect, he agreed that the deer was about the only concern that could be expressed in this general policy. Other wild animals were not accommodated, and deer is certainly not the basic interest which we would have in Cherokee National Forest. We could have an abundance of small wildlife if properly provided for.

Mr. McGUIRE. I would hope the ranger would be looking out for them. You probably have wild turkey, squirrel, and song birds. Each species of wildlife has somewhat different habitat requirements. The manager's problem is to try to meld together these requirements along with all the other things he is trying to do on the land. I am sorry the ranger did not point out these other wildlife requirements. Perhaps he thought the group was mainly interested in deer hunting.

Mr. BAKER. I would cast no aspersions on the attitude of the ranger. There might have been many things I didn't retain from his observations because of my lack of specific knowledge about the policies being pursued. These concerns I express, and I feel like they should be expressed by any individual who came to view what might be considered the beauty of a national forest because there is certainly no lack of beauty there.

Mr. McGUIRE. Thank you.

Mr. FOLEY. Are there any further questions of Mr. McGuire?

Mr. McGuire, we appreciate your appearance and thank you very much.

Mr. McGUIRE. Thank you.

Mr. FOLEY. The next witness will be J. Ed Moore, manager, forestry programs, American Pulpwood Association, New York City.

We welcome you to the subcommittee this morning.

**STATEMENT OF J. ED MOORE, MANAGER, FORESTRY PROGRAMS,
AMERICAN PULPWOOD ASSOCIATION, NEW YORK, N.Y.**

Mr. MOORE. Thank you.

Mr. Chairman and members of the committee, I am J. E. Moore, manager of forestry programs for the American Pulpwood Association, a national trade association of pulpwood producers, dealers, consumers, and others directly concerned with growing and harvesting pulpwood—the principal raw material used in the manufacture of pulp, paper, paperboard, and other products.

The establishment of an Interdisciplinary Clearcutting Practice Study Commission seems to us to be unnecessary for the following reasons:

1. Extensive hearings on clearcutting were held by the Senate Interior and Insular Affairs Subcommittee on Public Lands during the 92d Congress. These hearings were open to anyone who wished to

testify and as the result of the hearings a tremendous amount of information has been compiled and considered. A study commission such as the one proposed could be expected to hold additional hearings and would undoubtedly be given the same information by the same group of witnesses. This information is printed in the hearing record. It was studied thoroughly by the Senate subcommittee and its conclusions were printed in a committee report printed in March 1972.

In this report the Senate subcommittee recognized that it is often necessary to clearcut to prevent the spread of insects or disease, to salvage usable wood after a fire, to prepare for regeneration of a damaged stand and for other purposes. It also recognized that clearcutting is an essential forest management practice that must be used if our forests, including Federal forests, are to yield the timber needed by the people in this Nation.

We see no reason why a repetition of the hearings and a study by a different committee at a considerable cost in time and money could be expected to turn up new information or reach a different conclusion.

The Senate subcommittee did recommend additional research on soil nutrients. We endorse this effort and feel that the \$2½ million that would be authorized by H.R. 14354 a study commission could be better spent in scientific research on soil nutrients.

2. There is a wealth of information in reports prepared by deans of five leading forestry schools at the request of the Environmental Protection Agency. These reports contain authoritative information based on the best and most up-to-date experience and research on clearcutting in various parts of the country. Summaries of these reports have been printed in the Congressional Record. It would be a real service to all who are interested in clearcutting if these reports were published in full.

3. The President's Advisory Panel on Timber and Environment is investigating the practice of clearcutting from an environmental standpoint and we see no reason to duplicate this effort.

Considering the information already available on record, and the conclusions that have been reached by scientists and a congressional subcommittee, we respectfully recommend that no further action be taken on this legislation.

This completes my prepared statement. I will be glad to try to answer any questions you have.

Mr. FOLEY. Thank you, Mr. Moore.

Are there any questions?

Mr. BAKER. One question.

Mr. FOLEY. Mr. Baker.

Mr. BAKER. I believe we heard testimony before this subcommittee previously on the matter which involved subsidies for timber farming or tree farming, that 70 percent of the land in our southern area was forest land, was owned privately, and about 30 percent owned by the Federal Government.

Do you have any information as to how the ownership of forestland is divided in our area of the Nation?

Mr. MOORE. You mean in the South?

Mr. BAKER. Yes. Private and federally owned.

Mr. MOORE. Most of it is in private ownership. I don't have exact percentages. They are available, but most of the federally owned land is in the West and in the South it is comparatively small.

Mr. BAKER. Could the private sector basically furnish the requirements of the timber industry in our section of the country.

Mr. MOORE. At the present time I think it could. In the South, yes, sir. As for the future, I don't know.

Mr. BAKER. Thank you, Mr. Chairman.

Mr. MOORE. Projections indicate we are going to need a lot more wood and we will be cutting more than we are growing within the next 15 to 30 years.

Mr. BAKER. Thank you, Mr. Chairman.

Mr. FOLEY. Mr. Moore, one question. You mentioned these studies conducted by forestry schools which are not available for public release. There are not multiple copies available?

Mr. MOORE. No. They have not been made available in full. The summaries are in the Congressional Record but the full reports have not been published.

Mr. FOLEY. Thank you very much. We appreciate your testimony.

Mr. MOORE. Thank you.

Mr. FOLEY. The next witness will be Mr. Michael Frome, conservation editor of *Field & Stream*, Alexandria, Va. Mr. Frome is well known to conservation resource management, is one of the respected authors and writers on the subject, and has a wide national following, which includes the U.S. Congress.

Mr. Frome, it is a great pleasure to have you with us today.

STATEMENT OF MICHAEL FROME, CONSERVATION EDITOR, FIELD & STREAM

Mr. FROME. Thank you, Mr. Foley.

I might also add that I am the author of three books on the national forests, including one together with former Secretary Freeman.

The first point I would like to make as an expert, so-called self-styled expert on the national forests, is to comment on the Chief's suggestion that the Forest Service only follows orders. I have here a brochure called "National Forest Lands Have Many Uses," which is widely distributed by the Forest Service in the South. It includes the following documents:

New Forests for Wildlife, how even-aged forest management benefits the sportsman.

Forests for the Future. Another promotion for clearcut forestry.

Even-Aged Management, a dynamic forest practice.

Forest Patterns, another speech of former Chief Cliff on clearcutting.

I think if the Forest Service is intent on following orders it should not be promoting the very practice that is subject to criticism today.

Clearcutting of public forests is plainly a major and critical environmental issue of our time, which Congress, unfortunately, but for a few notable individual exceptions, has effectively avoided and ignored. Something raised by not only the hairy environmentalists, but by some responsible members of the establishment. I quote from a speech of William Towell, executive vice president of the American Forestry Association, whose leadership is closely allied with the timber

industry, Forest Service, and the forestry profession. As Mr. Towell declared in 1968, some foresters at least have failed to give proper consideration to their environmental responsibilities. They have clear-cut steep slopes, opening the way to floods and erosion. They have wiped out fish and game populations in whole watersheds in attempts to control pests by spraying. They have destroyed roadside vistas and the beauties of the landscape through carelessness or thoughtless harvest methods.

Forestry deserves much of the criticism leveled at it.

We at Field & Stream therefore welcome this hearing before the House Agriculture Committee, particularly since we hear from our readers continuously about the devastating effects of clearcutting upon the cherished outdoor resources. I am not talking simply about fish and game, but the entire ecological spectrum and the beauty of the landscape.

Insofar as game itself is concerned, I would like to quote a report from the director of fish and game in Alabama, Charles Kelly, based on field surveys by his biologists:

Immediate damage to all species of wildlife, squirrel and turkey habitat lost permanently in areas planted in pine, clearcutting and replanting to pine detrimental to most species of game. Some immediately, others over a long period of time.

From another one:

I am convinced that clearcutting is the most serious threat to wildlife we face today. Wildlife losses are greater than benefits received.

Timbermen and foresters insist that the practice of clearcutting opens the woodlands, increases the growth of herbs and shrubs to game. The Forest Service publishes color propaganda, brochures, giving the impression that deer and game are synonomous, failing to mention that when one species moves in there is apt to be a mass exodus of many other species. The idea is forest wildlife management is diversity of habitat. When this leads to destruction of young trees by deer, sportsmen are subjected to demands to bring the deer into balance. This is another way of saying that forest managers have reduced the capacity of the range and therefore the public must accept a reduction.

We at Field & Stream receive many complaints from our readers all over the country.

This is why we urge Congress—as an opener—to press the application of the environmental guidelines for timber harvesting on the public lands enunciated in the draft Presidential Executive order of January 7, 1972, as prepared by the Council on Environmental Quality. To quote from section 1, on policy:

The Federal Government shall provide leadership in the development and application of environmentally sound forest management practices."

Environmentally sound practices are not prevalent. Again and again the Forest Service concedes the errors of its ways, its acquiescence to the pressures of the timber industry, its weakness due to budgetary imbalance favoring timber production above all other uses. This must end.

To continue:

The Government shall insure that environmental considerations are weighed fully in all decisions made on the public timberlands, in order to produce a high

sustained yield of goods and services without harm to the long-term environmental and resource values of those lands.

Thus, you see, the CEQ and concerned citizenry who share this concept, are not demanding that timber harvest be halted, but rather that the resource must be sustained for the greatest good of the greatest number over the longest period of time. This basic conservation precept of Gifford Pinchot is not being followed by the very agency he founded and which claims to fulfill his gospel.

Finally:

It shall formulate and maintain management plans with full public review, determining the range of multiple uses to be made of public timberlands consistent with protection of those values.

But we are not getting anywhere near an adequate public review in determination of the range of multiple uses. Even when hearings, or "listening sessions," are conducted, the agency then presumes to make the ultimate decisions and to prescribe what is "best" for the people—whether the people like it or not. How long must this go on?

In 1962 Charles Reich wrote that Congress had surrendered to the agencies its prerogative for the determination of public policy, specifically in the area of forestry. Awesome broad powers have been granted, not simply for administration, but for determining the character and usage of our landed heritage.

At their best, foresters are too narrow for this responsibility. To quote a recent official study on "views of interest" by the Pacific Northwest Forest Experiment Station:

The foresters included in this study almost unanimously aligned themselves with commercial interests on the issue of timber cutting and saw the Forest Service (their superiors) as favoring these interests. These data support accusations that foresters favor commercial over recreational-aesthetic forest values.

I might say, with reference to Mr. Kyl's statement about interdisciplinary studies, I don't care how many interdisciplinary studies are conducted, the answer always comes up the same: favoring commercial over recreation or forest uses.

I will skip some of this. I would like to quote from a reader of ours in Wyoming:

"The Teton National Forest has begun a clearcut timbering program in the southern reaches of Jackson Hole, Wyo.," writes Sam Hicks, now of Temecula, Calif., who spent half his life in the area, namely the beautiful Hoback Basin, as cattle rancher, game outfitter and guide. To continue his story, I quote further:

My one and only concern is what clearcut timbering does to a high-elevation country and what it will do to the southern Jackson Hole elk herd. One watershed near the head of the Hoback River has been completely denuded of all cover. The Teton National Forest has already advertised new timber sales in the same area where a large portion of the southern elk herd lives and propagates; further clearcutting here will seriously affect not only the elk, but also the deer, moose, bear and bird life.

For your information, regardless of what proponents of clearcut timbering practices tell you, timber—principally lodgepole pine, Douglas fir, and some spruce—which grows above the 7,000-foot level never reproduces after it is clearcut. Timbered valleys are turned into eroded deserts, and that is the way they will always remain.

Following the hearings in the Senate, both in Washington and the field, the Subcommittee on Public Lands adopted a series of guidelines for application on public forests—a rather hopeful, half-way step,

I thought, representing a valiant effort by Senator Church and Senator Metcalf in face of the powerful political influence of the timber-forestry axis. The Forest Service indicated its acceptance of these guidelines. Unfortunately, there has been no demonstrable follow-through by the Senate Committee. Neither have we had any reports from the field of a let-up in clearcutting-first policies on the ground. To the contrary, in all parts of the country citizen discontent and frustration are rising.

Insofar as the proposal before us for the establishment of a commission to investigate and study the practice of clearcutting is concerned, this same idea was contained in an early draft of the Senate report as prepared by Dr. Edward Crafts, then serving as a consultant to the Interior Committee. Dr. Crafts is a former Deputy Chief of the Forest Service and later the first director of the Bureau of Outdoor Recreation, a well-known figure both in public administration and the profession of forestry. But he recognized in his recommendations that study in itself is not enough; action is imperative and urgent. So it must be recognized also in dealing with the legislation before this Committee of the House.

Despite the Multiple-Use-Sustained Yield Act of 1960, the Service has remained primarily timber-oriented—

Wrote Dr. Crafts—

it may be operating in violation of the spirit and intent, if not the letter, of both the Multiple-Use-Sustained Yield Act of 1960 and the National Environmental Policy Act of 1969. It has used the former as a public relations device to cloak and justify its activities, but has failed to translate the generalities of the statute into firm and workable guidelines.

The Service has been slow and insensitive to the awakening national awareness of our environment. Until recently, it has failed to perceive the shocking impact of clearcutting devastation on the public senses. It has continued to view clearcutting through purely professional blinders as one of the best ways to grow and harvest timber given certain conditions. It has failed to understand that clearcutting should be judged not only as a timber harvest device, but also with respect to its environmental impact and how it stacks up as a method of managing the national forests for all of the multiple purposes for which the forests were created and are administered.

Recent Forest Service changes in policy (and they have been numerous) have been slow in coming, may be insufficient or too generalized, and largely are a defensive response to environmental pressures and public outcries, rather than stemming from Forest Service initiative.

Dr. Crafts urged the following eight guidelines, which I believe are paramount—essential to any course of action taken by this committee:

1. In national forest administration, equal weight should be given to all public uses of national forest resources. No longer should the Forest Service be primarily timber oriented.

2. The Forest Service should adhere to the letter and intent of the Multiple-Use-Sustained Yield Act. Reprogramming of funds by the Congress should be sought if necessary.

3. The annual timber harvest from the national forests should be held at not more than fiscal year 1970 level of 11.7 billion board feet until the 5 million acres of national forest land made idle through fires, disease or insufficient renewal are again productive. Reprogramming of timber sale and other funds, as well as supplemental appropriations should be sought from Congress for this purpose.

4. Write into all new timber sales contracts, and all old ones for which extension is requested, the new policies and requirements for environmental safeguards, and strong penalties for violation.

5. Cease the practice of assigning timber cut quotas to individual national forests and ranger districts. In considering candidates for promotion, evaluate them on the basis of quality of performance rather than quantity of timber cut.

I would like to cite No. 5. Timber production prevails throughout the infrastructure of the industry today. In addition, I would suggest one other guideline to transcend all the rest. Timber management practices of the Forest Service and the Bureau of Land Management must be brought under the purview of the National Environmental Policy Act. This must be done at once and without delay.

If the practices are valid there should be no hesitancy in subjecting them to open review and comment both in toto and in every national forest and management unit of the BLM. There is too much at stake for our generation and generations still unborn.

6. Do not be pressured into cutting more board feet or acreage than annual funding assures can be accomplished on a quality basis. The Federal agencies should regain their former role of setting quality standards.

7. Hardwood or broad-leaved forest types: no clearcutting as a general forest practice; nor to influence regeneration or stand composition. Permissible in emergencies for fire, insect, or disease control.

8. Softwood or coniferous forest types.

(a) No clearcutting unless timber production is clearly the dominant purpose of management on the acres proposed for clearcutting.

(b) No clearcutting if alternate silvicultural methods would provide a reasonably high quality of resource management.

(c) No clearcut blocks, or strips, or patches in excess of 25 contiguous acres.

(d) During any 10-year period, the uncut area in timber sale shall equal or exceed the clearcut area on that sale.

(e) Adapt size and shape of clearcuts to landscape and topography.

(f) No clearcutting where slopes, exposure, soil, fire, insect, disease or regeneration hazards indicate accelerated runoff, loss of soil nutrients, or lack of prompt regeneration.

(g) No clearcutting unless agency is financed and equipped to replant the clearcut area within 2 years if needed.

A \$2½ million study may be in order, but something more definitive is urgently needed. Guidelines, moratorium, environmental impact statements—all three have been variously proposed and are probably in order. This committee has the power and authority for constructive action. Now is the hour to exercise it.

Thank you, Mr. Chairman.

Mr. FOLEY. Thank you, Mr. Frome.

Any questions of Mr. Frome?

Mr. BAKER. One short one.

Mr. FOLEY. Mr. Baker.

Mr. BAKER. I wonder if you would reiterate your thinking that possibly we don't really need a \$2½ million study now and that we know enough now. You proceed with the solution to the problem which is apparent to everyone so far as the national forests are concerned?

Mr. FROME. Studies often, it seems to me, are a handy device for avoiding action which is necessary. The Forest Service is a partner of the Hubbard Brook study on soil nutrients referred to earlier this morning. The Forest Service does not publish anything about the Hubbard

Brook study. It endeavors to discredit the author of that study. I think the Hubbard Brook study answers the need for any \$2½ million further research. It cries out for an immediate moratorium on clear-cutting.

Mr. BAKER. Thank you, Mr. Chairman.

Mr. FOLEY. Mr. Frome, I want to thank you very much for a very strong and informative statement.

Before we adjourn or recess this morning's hearings, I would like to ask whether there are any witnesses in the room scheduled to testify who will find it impossible to return this afternoon at 2 o'clock.

We would like to give consideration to any out-of-towners who find it difficult to come back this afternoon.

Very well, we will shortly recess the hearings. In view of your last remark, Mr. Frome, I think this might be an appropriate time to read in the record, without prejudice as far as I am concerned, on the merits of this legislation, a little ditty that was written about 1955 in *Punch*, an English humor magazine, entitled "Royal Commission." It is by Geoffrey Parsons:

If you're pestered by critics and hounded by faction

To take some precipitate, positive action

The proper procedure, to take my advice, is

Appoint a Commission and stave off the crisis.

By Shelving the matter you daunt opposition

And blunt its impatience by months of attrition,

Replying meanwhile, with a shrug and a smile,

"The matter's referred to a Royal Commission."

A Royal Commission is strictly impartial,

The pros and the cons it will expertly marshal

And one of its principal characteristics

Is getting bogged down in a sea of statistics.

So should you, perhaps, for inaction be chided

An answer to all men is aptly provided;

You simply explain, again and again,

"The Royal Commission has not yet decided."

Let the terms of its reference lack proper precision

That arguments lengthy may hold up decision,

And then, while they fumble with fact and with figure,

The conflict within the Commission grows bigger.

And so, when at last its report is provided,

If clamour for action has still not subsided,

You say with a pout "The matter's in doubt.

The Royal Commission is somewhat divided."

Thus, once a Commission its session commences,

All you have to do is to sit on your fences

No longer in danger of coming a cropper,

For prejudging its findings is highly improper.

When the subject's been held for so long in suspension

That it ceases to call forth debate and dissension,

Announce without fuss "There's no more to discuss.

The Royal Commission's retired on a pension."

Mr. BAKER. Mr. Chairman, may I associate myself with the chairman's remarks?

Mr. FROME. On the other hand, Mr. Chairman, I would like to say that I think Congressman Fraser and his 30 cosponsors deserve all credit for demonstrating interest in a major environmental issue of our time. If we have 300 cosponsors I think we would be able to get action without proposal of the study.

Mr. FOLEY. I certainly agree with those remarks, Mr. Frome. I think the sponsors of this legislation are deeply concerned about the policies involved in clearcutting and seek one approach to focusing on that issue.

As I said, I read that little verse by Mr. Parsons without prejudgment on the issue presented before the committee.

Accordingly, we thank all witnesses for their patience.

The subcommittee stands in recess to meet at 2 o'clock this afternoon.

(Whereupon, at 11:55 a.m., the subcommittee recessed to 2 p.m. of the same day.)

AFTERNOON SESSION

Mr. FOLEY. The Forest Subcommittee will come to order.

The committee meets for further consideration of H.R. 14354 and identical bills.

Our next witness will be Mr. John Hall, director of Forestry Affairs, the National Forest Products Association, Washington, D.C.

STATEMENT OF JOHN HALL, DIRECTOR OF FORESTRY AFFAIRS, NATIONAL FOREST PRODUCTS ASSOCIATION, WASHINGTON, D.C.

Mr. HALL. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee: I am John Hall, director of Forestry Affairs for the National Forest Products Association. NFPA is a federation of 23 regional, product and species associations representing the solid wood products industry from coast to coast.

The raw material supply for our Nation's wood products industry comes from three principal land ownerships: Federal forest lands, industrially owned forest lands, and other nonindustrial private forest lands, such as farm woodlots. About one-third of our Nation's annual wood fiber supply comes from each of these sources. Even-aged forest management which includes the practice of clearcutting, is an important management process in all three ownerships. It is especially important in the conversion of old-growth, overmature, diseased, or insect-infested forests into healthy, growing stands. Clearcutting is also essential for the perpetuation of many of our most important species of hardwood and softwood trees.

In the use of the clearcutting technique man has emulated the destructive techniques of nature—fire, windstorms, and insect and disease infestations—but has exercised responsible controls to assure the perpetuation of these species and to obtain their useful products.

There is no denying that clearcutting substantially modifies immediately the visual aspect of the area harvested. This visual modification is temporary, however, and properly conducted, clearcutting should not alter either the basic productivity or the stability of the site.

Clearcutting and related aspects of forest management have received considerable public attention in the past few years. Professional attention has been evident not only for decades in the United States, but for centuries in Europe.

As a result of recent public concern and some apparent errors in application of clearcutting to national forest management, clear-

cutting has been one of the most studied aspects of forest management in the public eye.

SUMMARY OF CLEARCUTTING REPORTS FOR RECENT YEARS

In May 1969, the Forest Service, northern region, and intermountain forest and range experiment station, conducted a study on management practices on the Bitterroot National Forest. The objective of this study was to evaluate land and forest management practices on the Bitterroot National Forest. The study's major conclusions were that the Bitterroot National Forest needed to emphasize quality management. It stated that balanced program execution was needed which was dependent upon funding and manpower authorizations. Clearcutting was considered an acceptable practice if it achieved the management objectives set forth in the multiple-use plans and other cutting methods were not silviculturally feasible.

In January 1970 Senator Metcalf requested the University of Montana, under the direction of Dean Bolle, to review the long-range effects of clearcutting and the role of timber production and other uses on the Bitterroot National Forest. The report did not condemn clearcutting but commented on its application on some areas.

The regional forester considered both of these reports in issuing new management directives for the Bitterroot National Forest.

In February 1969 the West Virginia State Legislature authorized the West Virginia Forest Management Practices Commission to review the relationship of even-aged and uneven-aged management to multiple-use activities on the Monongahela National Forest. The commission felt that clearcutting and even-aged management as a primary system of management were not compatible with multiple use.

In March 1970, Forest Service Chief Cliff appointed a special committee to review the application of current and planned timber harvesting and other management practices on the Monongahela National Forest. Based on this review and the recommendations of the West Virginia commission, the Forest Service regional forester issued revised management directives for the Monongahela National Forest.

In July 1970 Forest Service Chief Cliff authorized a Forest Service multidisciplinary team to make a national review of Forest Service timber management activities for the purpose of highlighting problem situations and developing corrective action where and when necessary. Thirty problem areas relating to silviculture, reforestation, esthetics, utilization, cutting methods, sustained yield, road development, logging, timber planning, personnel training, and research were identified. These are currently under review by the Forest Service.

In July 1970 the regional foresters in Denver and Ogden authorized a team of Forest Service personnel to review timber management practices on national forests in Wyoming. The group found that the quality of multiple-use planning could be improved. They determined that clearcutting was an acceptable practice but felt that there had been some misapplication in Wyoming forests. Regional Forest Service personnel are now preparing action plans to implement the findings of the group.

In July 1971 the Council on Environmental Quality requested five university forestry school deans to prepare independent reports on clearcutting as a timber management practice. Each of the deans

found clearcutting to be an acceptable forestry practice. They found cases of misapplication and presented detailed criteria for proper application. No further action has been taken on these reports which have not been made generally available to the public.

In April, May, and June 1971 the Subcommittee on Public Lands of the Senate Interior and Insular Affairs Committee held hearings on the practice of clearcutting. The purpose was to determine whether clearcutting results in intolerable impacts on the Federal land environment. The committee heard over 90 witnesses and also had the benefit of the information and recommendations contained in the reports mentioned previously. In its report 3 months ago, the committee recommended the following guidelines:

1. *Allowable harvest levels*

(a) Allowable harvest on Federal forest lands should be reviewed and adjusted periodically to assure that the lands on which they are based are available and suitable for timber production under these guidelines.

(b) Increases in allowable harvests based on intensified management practices such as reforestation, thinning, tree improvement and the like should be made only upon demonstration that such practices justify increased allowable harvests, and there is assurance that such practices are satisfactorily funded for continuation to completion.

If planned intensive measures are inadequately funded and thus cannot be accomplished on schedule, allowable harvests should be reduced accordingly.

2. *Harvesting limitations*

Clear-cutting should not be used as a cutting method on Federal land areas where:

(a) Soil, slope or other watershed conditions are fragile and subject to major injury.

(b) There is no assurance that the area can be adequately restocked within five years after harvest.

(c) Aesthetic values outweigh other considerations.

(d) The method is preferred only because it will give the greatest dollar return or the greatest unit output.

3. *Clear-cutting should be used only where:*

(a) It is determined to be silviculturally essential to accomplish the relevant forest management objectives.

(b) The size of clear-cut blocks, patches or strips are kept at the minimum necessary to accomplish silvicultural and other multiple use forest management objectives.

(c) A multidisciplinary review has first been made of the potential environmental, biological, aesthetic, engineering and economic impacts on each sale area.

(d) Clear-cut blocks, patches or strips are, in all cases, shaped and blended as much as possible with the natural terrain.

4. *Timber sale contracts*

Federal timber sale contracts should contain requirements to assure that all possible measures are taken to minimize or avoid adverse environmental impacts of timber harvesting, even if such measures result in lower net returns to the Treasury.

The committee urged the executive branch to adopt and implement the guidelines. The House Appropriations Committee also urged adoption of the guidelines. The Forest Service and the Bureau of Land Management have stated that the guidelines will be incorporated in the procedures for National Forest and BLM timber management.

In view of the findings of these numerous studies and the responsive Forest Service attention to public concern over national forest administration, a study commission such as suggested by H.R. 14354

is unnecessary. While no reasonable person can object to additional study of any issue, it is important to focus such study in areas inadequately explored where it is most likely to achieve beneficial results. The basic issue of whether or not clearcutting is a reasonable management tool has been thoroughly reviewed by each of the groups which have already studied it. In no case was elimination of clearcutting suggested. Each study, however, did question some aspect of clearcutting which perhaps deserves further scientific investigation.

Last year the issue of soil nutrient depletion was introduced into the clearcutting controversy. Soil nutrient balance is also a concern in other harvesting techniques. Several soils spokesmen at subsequent congressional hearings questioned the basis of the concern expressed and urged that additional research work be conducted in this area. The Senate Interior Committee, as part of its report on clearcutting on Federal timberlands, stated:

Some witnesses expressed concern at the Committee's hearings that current timber harvesting practices are depleting basic soil nutrients at such a rate that we cannot rely on our forest lands to remain productive in perpetuity. Others discounted such assumptions by maintaining they were based on inadequate or non-existent scientific data. Everyone, however, including the Forest Service, agreed that additional research was desirable.

The Committee expects the Secretary of Agriculture to take necessary steps to accelerate all essential forestry research. He should cooperate in this effort with experts in related fields who are not employed by the Forest Service. We view accelerated forestry research as vital to continuous improvement in the management of the National Forests and other Federal forest lands so that they will serve our generation and future Americans better.

We would urge that rather than spend 18 months and \$2.5 million on a congressional investigation of clearcutting, that comparable funds be invested in basic research in such areas as soil nutrient balances under various harvest methods; use of fire for slash disposal, regeneration and other silvicultural objectives; and soil stability under alternative harvesting procedures. The mechanisms already exist for directing this research to those most capable through the Forest Service Experiment Stations and the Nation's colleges and universities, through the McIntire-Stennis research program.

Thank you, sir.

Mr. FOLEY. Thank you, Mr. Hall.

Any questions?

We appreciate your testimony. I would like to congratulate your organization and the other conservation organizations you mentioned in supporting an expanded budget for the Forest Service.

One of my concerns over the years is that we have put legitimate demands on the Forest Service to do a better job in the forest areas but we do not give the support in funding that is necessary to implement these demands.

I think over the last 10 years, at least according to the Forest Service's own stated funding requirements, they received less than 60 percent of the available resources necessary to do the job.

I am concerned particularly that we have not put enough money into the effort of reforestation. I think industry and conservation organizations should be able to cooperate as they apparently have in this case to achieve that objective.

Mr. HALL. These lands are a fantastic resource of the Nation and can produce a lot more goods and services if the Forest Service is provided the adequate manpower, funding, and direction.

Mr. FOLEY. Thank you.

The next witness will be Mr. Howard D. Bennett, executive vice president, Appalachian Hardwood Manufacturers Association.

STATEMENT OF HOWARD D. BENNETT, EXECUTIVE VICE PRESIDENT, APPALACHIAN HARDWOOD MANUFACTURERS ASSOCIATION, CINCINNATI, OHIO

Mr. BENNETT. Thank you, Mr. Chairman.

Mr. Chairman and Congressman Teague, thank you for the opportunity to appear before you and present this statement.

I am H. D. Bennett, executive vice president of Appalachian Hardwood Manufacturers, Inc. I am also a professional forester. We are a trade association of Appalachian hardwood lumber manufacturers and landowners and consumers.

The Appalachian hardwood region is that area lying in the mountains between Maryland and Georgia and has been identified, both legally and botanically, as a distinct timber-growing and producing area. My remarks will be confined to the application of even-aged management in this hardwood-producing region.

This shows the area that is the Appalachian hardwood region which is approximately the 1,000-foot contour around the mountains between Maryland and Georgia. The area is the source of the major rivers of the east and the playground for millions from the teeming cities surrounding the area who, during the season, transfer the crowded atmosphere in the cities into the teeming campgrounds and highways of the area.

In the mountains during the past 20 years, we have seen an increase in the sawtimber volume of timber standing on the forests of about 75 percent. In the last 10 years we have seen an increase in the game harvest of about 100 percent, and an increase in recreational use of some 50 percent, and an increase in the area of commercial forest land area of about 10 percent.

During this period we saw come into being what was to many people a new tool of forest management, known as even-aged management to the professional foresters and clearcutting to laymen. Clearcutting, of course, was only one phase of the overall program. Before it was ever extensively applied, it had been well-established through exhaustive research as an excellent tool of management for the hardwood stands of the mountains. That some misapplication has been made is obvious to everyone who can see what he is looking at.

However, it is also obvious that the mistakes that were made have been blown up far beyond any relationship they may have had to the whole area, and as a whole the application has been good, assuring us better timber stands for the future than would otherwise have been possible. Much of the problem created by the application of even-aged management was brought about by a lack of preparation of the public toward its use.

While we appreciate the concern the leaders in Congress have for the development of our forest resources, as professional foresters we

are concerned about a proposal to make another study on even-aged management and its accompanying phase of clearcutting, and the expenditure of \$2.5 million. Such a study can certainly serve no useful purpose in the hardwood region. The \$2.5 million could be much better spent on other projects.

The whole program has been cussed, discussed, investigated, searched and researched until today in the Appalachian Hardwood Region even-aged management has become well recognized and well established as an excellent tool of forest management to accomplish its intended purpose.

In the Appalachian area we have seen exhaustive research and study, the results of which prove the excellence of the tool. The West Virginia Forest Practice Study Commission made a study of the tool and endorsed its use. The In-Service Review Commission of the Forest Service made a study and in the process identified even-aged management as a sound tool of forest management. The Subcommittee on Public Lands, under the chairmanship of Senator Frank Church, has studied the program and endorsed it, and the Fernow Experimental Forest has, through research, found it to be a good tool. It has also been endorsed by the Forest Practice Standards Committee in the Appalachian Region.

We need to be concerned today about the influence that cloistered scientists, cloistered college professors and uninformed laymen may have on the management of our forests. The problems connected with our forest conservation activities in our country today become even more serious when prominent magazines and newspapers distort the facts, accentuate the negative and play on the emotions of well-meaning, concerned citizens. Professional foresters working with other experts in the fields of resource management today are assuring the best for our forest resources.

In the mountains we have been concerned about how people can apparently get so excited about a relatively small area of clearcutting, and show relative unconcern in a program of forest fire prevention when in the next year or two we are facing a condition that will cause 3 million to 5 million acres of forest land to be burned over, because we have never been able to convince the "powers that be" that an effective program of forest fire prevention is necessary if we are to protect our forests from this threat. The resulting air and water pollution from these fires will far exceed any which could possibly be caused by clearcutting. An investigation into this situation would be much more far-reaching and much more beneficial to the resource.

We in the Appalachian Region are now faced with an attack by the gypsy moth that could defoliate thousands of acres of fine commercial forest land. We need a completely new market for low-grade hardwoods.

With studies already completed that have found even-aged management to be an excellent tool of forest management, we certainly do not need another study to tell us what we already know. We could use the money much better on forest fire prevention, protection against the gypsy moth, and basic research in better utilization.

Thank you.

Mr. FOLEY. Thank you.

Are there any questions?

Mr. TEAGUE. No questions.

Mr. Chairman, I would like to say, however, that no matter what this committee decides to do with this bill, I certainly agree with the comments about the importance of doing more about forest fire protection. I come from southern California, an area which has suffered every year from very serious forest fires. About half of my congressional district is in the Los Padres National Forest. We have no commercial timber operations, but we lose thousands upon thousands of recreation areas, many homes, not all of them summer cabins, because of forest fires.

I think we could and should do more about supplying the Forest Service with adequate funds to control, at least, some of these fires.

Mr. BENNETT. We made a study in the area. Every 10 years we get these blowups. We had them in 1952, 1962, and 1972, and 1973 is right on us and we are faced with a very serious situation.

Mr. FOLEY. Thank you again.

The next witness is Mr. George Alderson, legislative director of the Friends of the Earth, Washington, D.C.

**STATEMENT OF GEORGE ALDERSON, LEGISLATIVE DIRECTOR,
FRIENDS OF THE EARTH, WASHINGTON, D.C.**

Mr. ALDERSON. Thank you, Mr. Chairman.

I have a brief statement.

I am George Alderson, legislative director of Friends of the Earth, a national organization of 25,000 members, committed to the preservation, restoration and rational use of the earth. Our Washington office is at 620 C Street SE. We appreciate this opportunity to testify in support of H.R. 14354, the bill to establish a study commission on clearcutting. Friends of the Earth endorses the bill, but we urge the subcommittee to go further than simply establishing a study commission, as H.R. 14354 provides. Enough is known already to justify a renunciation of clearcutting, in large openings, on public forest lands. Friends of the Earth would prefer to see legislation before this committee to ban clearcutting in the national forests and BLM lands. Failing that, we would prefer to see H.R. 14354 amended to provide for a 10-year moratorium on clearcutting, in addition to the study.

The bill that is before us today falls far short of what is needed to stop the destruction of our public forests and of the land that must grow our future forests.

Many of the reasons for ending clearcutting now are covered in outline form in a special issue of our monthly newspaper, *Not Man Apart*, dated June 1971. I am submitting several copies for the use of the subcommittee. Among them are the following points, which I will only touch upon because technical witnesses are available to the subcommittee to cover these in detail:

(1) Clearcutting depletes soil nutrients; (2) It drastically increases sedimentation of streams; (3) It increases spring runoff; (4) It causes a greater fire hazard; (5) It increases windthrow hazard; (6) It increases the risk of insect and disease damage; (7) It produces comparatively low-quality wood fiber.

Foresters can also testify to the feasibility of ending clearcutting, and replacing it by more ecologically sound cutting systems. Thorough documentation appears in the hearing records of the Public Lands Subcommittee of the Senate Interior Committee, and many of the

specialists who testified before the Senate subcommittee would, I am sure, be willing to present their findings to this subcommittee as well.

I believe you will hear more yet on this day from the professional forester, Gordon Robinson, on the need to curtail clearcutting.

Friends of the Earth has the highest respect for him and we commend to your attention his expertise and on-the-ground experience in applying true sustained yield forestry.

Of course, there are those who remain to be convinced. For this reason, Friends of the Earth favors the further, in-depth study that would be provided by H.R. 14354. If this study commission will diligently pursue some of the key principles at issue—such as the impact of clearcutting of soil nutrients, and the availability of alternative cutting systems—then its results will clearly make a major contribution to the resolution of this most far-reaching forestry question.

We commend Congressman Fraser and the cosponsors for introducing this legislation, and we would urge the subcommittee to give it favorable consideration.

We thank the subcommittee for scheduling this hearing and urge you to give it favorable consideration.

Mr. TEAGUE. I may not have a chance to run it down in this Not Man Apart. I would be grateful to you if you would explain why, and there may be a very good reason why, clearcutting increases the fire hazard.

Mr. ALDERSON. I believe that is covered by the article of Mr. Robinson in that issue. Rather than venture an answer, I think it would be better if you could ask him when he testifies. I will confer with him after the hearing to make sure that we get to you the answer to that question.

Mr. TEAGUE. Thank you.

Mr. FOLEY. Thank you.

Mr. Baker?

Mr. BAKER. No questions.

Mr. FOLEY. Thank you.

Mr. ALDERSON. Thank you.

Mr. FOLEY. The next witness will be Mrs. Howard M. Wall, of Portland, Oreg.

STATEMENT OF MRS. HOWARD M. WALL, OF PORTLAND, OREG.

Mrs. WALL. Mr. Chairman.

Mr. FOLEY. You do not have a prepared statement, at least a printed one.

Mrs. WALL. No. I have been making a study of this situation for the past 2 years. I only got the notice of the hearing on Thursday. I was out of town Friday, Saturday, and Sunday. When I came back I found the letter asking for a prepared statement. So yesterday morning before I left Portland I telephoned and talked to Mrs. Knight in Congressman Fraser's office, and she said it was not necessary for me to have 26 copies. So I just have my notes.

Mr. FOLEY. We will be glad to hear you.

Mrs. WALL. I feel very keenly about this, because I have been connected with lumber, as has my family since before I was born. My father and husband were in the lumber business for many years. I

have always been interested in having a perpetual and sustained yield of timber.

Two years ago I had occasion to fly over the Mount Hood National Forest at a very low elevation on my way into central Oregon, a route which I drive maybe once a week, twice a month. From the highway the devastation is not visible except in a few places, but from the air it is simply appalling. You look down at a checkerboard where there is just as much bare ground as there are trees growing.

So after having made a trip up and back and going a second time in another direction to Bend, Oreg., over the same forest, I called the Mount Hood National Forest Office and explained that I was very interested in knowing why there were so many bare areas in the forest. They put me in touch with the man who was the head of the timber sales for the Mount Hood National Forest. When I talked to him and told him my problem, he said, "Mrs. Wall, if you fly it looks bad from the air; you ought to see it from the ground, it looks much worse". So he agreed to take me and show it to me from the ground.

I do not know if you are aware of the fact that very often when an area is cut in the forest they put a metal plaque up and there they put the date of cutting and reseeding. In area after area, there must have been 50 or 60 areas of 100 acres each which we visited that first day, in all of them there were no trees growing whatever. Most of them had been planted at least three times. This is something that the people in the lumber business were not aware of.

This particular forester was very conscious of it and had worked very hard to try to change the procedures. To a certain extent he has succeeded, but one of the greatest problems that he has is the pressure from the timber industry.

The reason that trees do not grow back at an elevation of 3,000 feet or above is that in the summer it is a mountain climate that is dry and the trees just burn up; it is just like planting a garden and not watering it.

In the winter, if they plant in the fall, they have thaws and freezes, and the little ice crystals that form uproot the trees. So they have been trying to find a species that would grow in these areas that have been bare since 1960. They are still clearcutting. They have changed the size of the cuts, but they still are not quite narrow enough. They are about as wide as a two-lane highway. In between they have tried strip cutting. Those areas were so wide because the only trees that grow up there at that elevation are along the periphery where they are shaded by the big trees that are left standing.

Every single report that I have read agrees that clearcutting should be applied just to certain areas, but that is not what is going on. That is the tragedy of it, because in the coastal areas where there is plenty of rainfall, if the terrain is not too steep and the soil is not too unstable, clearcutting works very well. The trees will come back quite quickly and you will have a stand.

However, in the higher areas they have not solved the problem, they think. I talked to the forester who took me on my first and succeeding expeditions. He has now been transferred to Denver. There he put into effect a plan that the only forests which they cut are forest pine, in our area considered a trash tree but in other areas they use it and they have started to use it because of the lack of other species in Oregon.

They have confined the areas, the biggest area being 35 acres. Some of the areas they are still clearcutting in Oregon are much bigger than that.

Several other things I have discovered.

That is, in this Multiple Use Sustained Yield Act it says:

All the various uses shall be without impairment of the productivity of the land, with consideration being given to the relative values of various sources and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

Yet in contrast to that there was a finding by the Public Land Law Review Committee, given in June 1970, where they have just completely paid no attention to that at all. Their recommendations are:

Dominant timber production units should be managed primarily on the basis of economic factors so as to maximize net returns to the Federal Treasury. Such factors should also play an important but not primary role in the timber management on other public lands.

I think that in many instances they have gotten away from the fact that it is not only the dollar value that counts.

Now when they are talking about the tremendous pressure that is on them because of the housing boom, I wonder if anybody realizes that in 1941 there was 1.5 billion board-feet of timber sold from the Federal national forests, and in 1970, there was 1.7 billion board-feet of timber sold to Japan, 200 million more than the entire cut in the national forests in 1941, which is a tremendous amount of timber.

Today, because of the pressures on the national forests, the annual cut in 1970 was 11.5 billion board feet of timber. It is very depressing because we are told that timber is growing as fast as it is being cut, but it really is not true.

The other thing that bothers me is that the stumpage is supposed to pay for the mainline roads that are put into the forest. They feel only by clearcutting can this be done. I think if the roads are going to be put in—I agree heartily with the speaker who preceded me that we must put more money into our forests and save them for posterity and not just pay the bills.

There was a report made by deans of five different colleges. Apropos of the study, I would like to read two excerpts, one from Dr. John Lee, Michigan State:

Harvesting in the general use areas should be pursued with an emphasis on environmental stability. Harvesting plans by managing agencies should be pursued in an atmosphere of close participation with local user groups. The machinery for such planning requires far more thought and effort than the managing agencies have yet been able to institute in the formulation of management plans. Community and firm dependency should be considered in the development of harvesting plans, but the managing agencies should be directed to emphasize environmental stability more than timber production in the general use areas.

This would mean acceptance of higher administration costs, higher logging costs and reduced stumpage revenues in order to avoid unfavorable environmental impacts. Cutting methods could not be prescribed arbitrarily because of the great variability in ecological conditions over forest areas, but a policy of emphasizing environmental stability in general use areas would avoid severe cutting impacts. Such a policy would imply that clearcutting, carefully controlled as to size, shape and dispersion, would be acceptable in some forest types and locations, but it would substitute shelterwood for clearcutting (despite higher costs) wherever shelterwood is an ecologically feasible alternative in even-aged management, and it would show a preference for even-aged management when this is a suitable means of maintaining a particular type.

One short quote by Dr. James S. Bethel from the University of Washington:

Without more empirical research which would be required to reach definitive conclusions, only some general impressions can be given here.

For this reason I am not enthusiastic about committees and more committees. I really feel if this House bill goes into effect, it should have some provisions for following through on the recommendations because there have been so many studies, some of which are in this bulletin which I have here, "Analysis of Forestry Issues in the First Session of the 92d Congress." There are many, many recommendations which, if followed, would greatly improve the situation.

Thank you very much.

Mr. FOLEY. Thank you. You show very serious concern about this problem and a very broad knowledge and background. Your husband and father being in the forest industry perhaps is why you have carried on your concern personally.

May I ask were you appearing on behalf of any other group or just as a concerned citizen?

Mrs. WALL. Just as a concerned citizen.

Mr. FOLEY. Worried about the impact of forest management policy?

Mrs. WALL. Yes; I have been so concerned about it, seeing it so closely. Last week I traveled through the Willamette National Forest. This problem at high elevations carries through the Gifford Pinchot, the Willamette, the Ochicose. There was a question asked about the fire hazard of clearcutting. It is the tremendous amount of slash that is left on the ground. To go through those woods is a disgrace.

Even today the woods that were cut last summer have slash piles higher than these desks around here, a terrible fire hazard. That is why they brought it up. One match and the whole thing would go up.

Mr. FOLEY. You are certainly to be commended to take the time and trouble for coming this far.

Mrs. WALL. Thank you very much.

Mr. FOLEY. The next witness is Mr. W. D. Hagenstein, executive vice president of the Industrial Forestry Association, Portland, Oreg. It is a pleasure to see you again.

**STATEMENT OF W. D. HAGENSTEIN, EXECUTIVE VICE PRESIDENT,
INDUSTRIAL FORESTRY ASSOCIATION, PORTLAND, OREG.**

Mr. HAGENSTEIN. Thank you, Mr. Chairman and members of the committee.

It is a hard act to follow Mrs. Wall, whose husband I was well acquainted with. He was one of our distinguished citizens, as she is in our State today. I entered into a contract with perhaps her father or one of her uncles, or what not, more than 30 years ago to grow trees at our nursery in Washington for reforestation on some of the lands of the M. & M. Woodworking Co. So I have had a long and personal association with the Wall family—and a very pleasant one.

Mr. Chairman and members of the committee, my name is W. D. Hagenstein. I reside in Portland, Oreg. I am a professional forester and a registered professional engineer in the States of Oregon and Wash-

ington. I am executive vice president of the Industrial Forestry Association, which has been working for a permanent timber supply for the forest industry of the Douglas-fir region in western Oregon and western Washington for 38 years.

Industrial Forestry Association consists of 114 companies and individuals in the business of growing, protecting and harvesting trees and manufacturing and merchandising lumber, pulp and paper, plywood and veneer, shingles and shakes, hard and soft boards, poles and pilings, doors, furniture, and other forest products. Our members operate more than 400 wood processing plants and conduct more than 200 different logging operations in our region. They employ more than 80,000 people. The annual payroll of their employees exceeds \$600 million.

I have worked in the woods in the Douglas-fir region for more than 40 years and earlier this month observed my 31st anniversary as an employee of the Industrial Forestry Association and its predecessors, during which period I have been the chief forester of the industry for more than a quarter century. This means that I have been in this business long enough to have observed the complete turnabout from an attitude of highest and best use of forest land, which was logging the timber, processing the logs and abandoning the land through failure to pay taxes to the kind of forestry which this industry is practicing today on its tree farms.

I have seen our industry translate its forest policies into action by running smoke out of the woods as a first essential to the practice of forestry and then rolling up its sleeves and getting to work to rehabilitate all that land which inadequate protection left idle years ago.

Our own contribution in this has been the growing of more than a quarter billion seedlings, all sold at cost, which have been used for artificial reforestation of a half-million acres of private land in the last 30 years. I have seen our industry begin to apply the principles of genetics to tree improvement to parallel for forestry the great successes made by the use of genetics in agriculture. Our group was the pioneer in this in our region.

I have seen commercial thinning become a fact on upward of 100,000 acres annually in this region. I now see wholesale conversion of old brushfields back into coniferous trees, precommercial thinning to optimize spacing to obtain full productivity, fertilization to improve growth and utilization of a kind never dreamed of a quarter century ago which has substantially increased our timber supply during the next quarter century when we will be converting the balance of our unmanaged old-growth forests into the kind of forests a growing nation must have in order to provide enough wood to meet its essential needs, with a margin to spare for national defense and foreign trade.

I would also like to qualify myself to talk about the subject of clearcutting which is proposed to be studied by the bills before this subcommittee today.

First, after I had worked in the woods for a few years, at 16 I began felling timber as one of the acts in the process of clearcutting in our part of the country. In those days the trees were bigger and the wages were a lot smaller. The trees today are a lot smaller and the wages are lots bigger. In those days we did it all by hand. Today it is done by power saws.

Later I went to college and was graduated as a forester and logging engineer and then planned and laid out areas to be harvested by the clearcut method. Still later I was a logging superintendent and logged areas by the clearcut method.

In the last 30 years I have played a significant part as a forester in getting the areas clearcut reforested, both those clearcut and inadequately protected in the past and those clearcut currently and followed immediately by artificial reforestation. I am a graduate of two forestry schools, one each in the two principal forested regions of the country—the Douglas-fir region where I attended the University of Washington and was graduated with a bachelor of science in forestry degree in 1938 and in the Southern Pine Region where I attended the school of forestry at Duke University and was awarded a master of forestry degree in 1941.

I am the coauthor of a college textbook entitled "Harvesting Timber Crops" second edition (1966), which is used in forestry schools throughout North America and in many other places in the world.

My professional experience, which is now in its 34th year, has enabled me to visit every significant forest region of the United States, not once but many times, and to observe thereby the kinds of timber growing and harvesting practices in use for the management of the more than 100 commercial timber species native to the United States and the results of such practices on the ground. Having served my professional society nationally for 10 years, the last 4 as president, I do not believe it is any exaggeration to say that I was probably the most widely traveled American forester in the last half of the decade.

I participated in the hearings on clearcutting practices held by the Senate Interior Committee on April 5 and 6, 1971, and commented then on the legitimate use of and the scientific sense of clearcutting.

I have also written and lectured widely on clearcutting since the artificially stimulated controversy on the subject came to the fore several years ago.

Rather than reiterate other presentations I have made on the subject of clearcutting in these proceedings, I would ask that two of my previous writings, one entitled "Emotions Aside, Clearcutting is Silviculturally Sound Concept" which appeared in *Forest Industries* magazine for December 1970, be included as part of my testimony and included in the record of these hearings. It is three pages.

Mr. FOLEY. Without objection, it is so included.

(The document follows:)

EMOTIONS ASIDE, CLEARCUTTING IS SILVICULTURALLY SOUND CONCEPT

Last month, an outspoken opponent of clearcutting gave his case against even-age management. Now comes a forester who presents the other view—that in the productive Douglas fir region, clearcutting is required to obtain satisfactory reproduction

(By W. D. Hagenstein, Executive Vice President, Industrial Forestry Association)

Mention clearcutting today and emotions run riot. Editorial writers foam. Politicos decry it. Students parade against it. Some foresters wonder about it.

Here in the world's most productive timber growing region, named for its principal species, we have 25 million acres of superlative forest soils, a favorable humid climate for trees and some of nature's best timber species. Acre for acre, there's no better 25 million acres than the Douglas fir region to grow trees for man's needs anywhere.

One hundred forty-three years after the first sawmill at Vancouver, Wash., triggered the first logging, the region has 18 million acres of growing trees, from last year's established seedlings to tall, straight second-growth up to 140 years old. Fifteen million of these acres have been harvested since 1827, mostly by clearcutting by man. The other three million acres of young growth resulted from nature's clearcuts—fire, insects, wind, disease and old age. Interestingly enough, of the 15 million acres of young growing forests on cutover land, only about two million acres have been artificially reforested. The balance is reforestation provided by nature and maintained by man, who has been doing an ever better job of preventing and controlling fire since the first organized protection started nearly 70 years ago.

Early foresters in the Douglas fir region, after preaching the need for forest protection, quickly searched for the whys and wherefores of successful natural reforestation. Their names are well known—Hanzlik, Munger, Hofmann, Isaac. They were the pioneer silvicultural observers and researchers. They spent a major share of their time in the woods—watching, measuring, experimenting, so they could understand how the tree species reacted to specific harvesting methods.

They learned quickly that the silvical fact of intolerance, in the case of Douglas fir, required clearcutting throughout most of the region, if it were to be reproduced successfully, either naturally or artificially. They also learned that the region's second most important species, western hemlock, despite its tolerance of shade, developed best in even-aged stands—again indicating clearcutting.

They observed too, that on the drier sites of the southerly and westerly slopes, reproduction was far more difficult to obtain than on the moister northerly and easterly slopes. This indicated a place for modification of clearcutting by shelterwood on the drier slopes to solve the critical soil moisture problem.

All the standard silviculture texts studied by American foresters list all the systems previously devised by European foresters which were considered adaptable to American conditions. Such texts as Hawley's *Practice of Silviculture* (1929); Toumey and Korstian's *Foundations of Silviculture upon an Ecological Basis* (1937); Baker's *Theory and Practice of Silviculture* (1934) and Westveld's *Applied Silviculture in the United States* (1939) all outline carefully the advantages and disadvantages of each silvicultural system. They also admonish the reader to beware of blanket rules in prescribing for the forests' harvest and renewal.

NATURAL CLEARCUTTING—BY FIRE

In specific reference to Douglas fir, they all emphasize that the species owed its origin in nature principally to clearcutting by fire. They state simply that it is logically harvested by clearcutting under most conditions. They do point out, however, that under some special conditions the shelterwood system may be required to regenerate the drier slopes. Lots of experience demonstrates this is true, in southwestern Oregon particularly.

These eminent teachers all conclude that the selection system of silviculture can only play a minor part in Douglas fir forestry because of the species' intolerance of shade. The most interesting discussion on this subject was T. T. Munger's appearance on January 6, 1939 before the Puget Sound Section of the Society of American Foresters at Seattle. His remarks were entitled "The Silviculture of Tree Selection in the Douglas Fir Region" (University of Washington Forest Club Quarterly XII (2): 5-13, 1939) and he drew on his experience of 30 years in the region to discuss all the pros and cons. His conclusion about the selection system was dramatic and unforgettable. He quoted an old German saying—"Der Plenterwald muss nicht ein Plünderwald werden." The selection forest must not become a plunder forest.

Munger's earlier classic USDA Bulletin No. 1493, "Timber Growing and Logging Practice in the Douglas Fir Region" (1927), with an introduction by Col. W. B. Greeley, makes the case for clearcutting for successful silviculture in Douglas fir. He notes also that western hemlock and Sitka spruce, even though shade-tolerant species, are susceptible to wind damage and rapid disease infection from scarring in partial cutting and thus prescribes clearcutting for them too.

Leo Isaac, "Mr. Douglas fir" himself, spent virtually his whole Forest Service career as the principal researcher into the species' reproductive habits and secrets. His many publications, an outstanding one being USDA Circular 486, "Factors Affecting Establishment of Douglas Fir Seedlings" (1938), contributed much to the understanding of the region's foresters as to how to manage Douglas fir. From his studies Isaac became, and has remained, a firm advocate of clearcutting as the main means of perpetuating this great tree out of which more American homes have been built than from any other species.

Isaac was always careful to admonish us younger foresters, when we were looking for solutions to our silvicultural problems, to go out in the woods—"for the answer is there if you're observant enough to see it." Anyone who cares enough to visit the woods in the Douglas fir region can see the results of clearcutting the overmature natural stands everywhere, to the tune of 15 million acres of beautiful young forests from Bellingham to Medford—from the Cascades westward to the Pacific Shore.

"BEAUTIFUL CUTOVER LAND"

Last year I took a couple of prominent journalists to a southwest Washington tree farm to watch tree fertilizing by helicopter. After the whirlybird disappeared out of sight I was admiring the beautiful expanse of green, growing forest stretching out before us and said, "There's a beautiful piece of cutover land." One of the newsmen responded, "What do you mean, cutover land? It's all covered with trees." My reply was, "That's just the point, we're looking at a quarter-million acres that has all been clearcut in the last 40 years, all reforested, not a snag in sight, it's beautiful."

They agreed and said they had learned something the public needed to learn too. Never again will I refer to "beautiful second growth." From now on it will always be "beautiful cutover land." It will help make people understand what happens when we foresters prescribe clearcutting and even-aged management and it's done in apple pie order and followed up by effective forest protection.

Many years after the pioneer scientific silvicultural investigations by Hanzlik, Munger and Isaac, the writer had the privilege of heading up a forest practice subcommittee of the West Coast Forestry Procedures Committee to draw up a statement on forest practices for the Douglas fir region. We spent a couple of years at it and finally published our report as a section in the committee's "Recommended Forest Practices and Techniques" in 1954. Guess who were still around to counsel the younger foresters on it—Hanzlik, Munger and Isaac. And there wasn't anything much new in our recapitulation of accumulated silvicultural knowledge because the principles, which dictate how a forest must be handled, do not change because they follow natural laws.

And that's true today, except some foresters and politicians are attacking even-aged forest management and its primary system—clearcutting. Recent blasts against clearcutting on some national forests in West Virginia and Montana have created pseudoscientific fallout in the Douglas fir region and elsewhere.

There is a definite drive to discredit clearcutting as a scientific silvicultural system. However, the detractors have no evidence backed by scientific research which demonstrates that those species and forest types which can only be reproduced by "letting daylight into the swamp" should be managed any other way.

Of course, all timber harvesting could be discontinued, "for we can build our homes," as one member of Congress said in the House of Representatives last spring, "with steel, glass, aluminum, brick and plastics." My comment: "But they're all non-renewable resources!"

Dedicated foresters who want America's forests to continue to serve our citizens in every way and to serve them better are not running scared, despite some pronouncements from some quarters. They are not turning their backs on the half-century of forestry research which has established the need to clearcut certain species to perpetuate them. Example was U.S. Regional Forester C. A. Connaughton's article in the May 1970 *Journal of Forestry* which called clearcutting a sound ecological practice (where applicable) and called for foresters to remind the public that the profession is committed to not only developing forests for production of essential commodities, but for their environmental and aesthetic benefits too.

Another forestry leader, President Kenneth P. Davis of the Society of American Foresters, appeared last April before the U.S. Senate Appropriations Committee to tell its members that the profession backs clearcutting as a scientific silvicultural system wherever appropriate.

CLEARCUTTING PROVIDES BONUSES

While clearcutting has been used in the Douglas fir region principally to harvest timber to support its basic and primary economy for nearly a century and a half and to reforest the cutover land for support of our future, it provides some important bonuses too. Clearcutting creates favorable conditions for multiple use.

In the case of wildlife, clearcutting transforms a biological desert into a favorable habitat by providing forage. You don't find many big game animals or birds under our century-old, dark, dank Douglas fir forest. Reasons are—too little feed for wildlife and no sunshine. Lower animals, just like the higher ones, crave and need

sunshine for survival. Oh, I know that people in the rest of the country don't think we get much sunshine in the Northwest, and in some years we don't, but our animals know where it is and, except for seeking shelter in the old-growth forest during storms, you'll find most of them, as any hunter can tell you, in the cutover land in which we are manipulating the cover through clearcutting initially, thinning in the second crop, clearcutting again and so on.

Another bonus of clearcutting—it's good for fish. Insects—their food—develop best in cutover lands.

Still another bonus is the excellent watersheds developed by clearcutting old-growth and replacing it with higher water yielding young trees. Best example in the region is Seattle's 90,000-acre Cedar River Watershed where silviculture by clearcutting plus effective forest protection have abundantly supplied pure water for 65 years.

Clearcut silviculture in our region has also provided most of our outdoor recreation. Housewives and youngsters of all ages, for a hundred years, have concentrated their picking of our delicious wild blackberries and huckleberries in man's and nature's clearcuts, for that's where the berries grow as part of the ecological plant succession. Berry-picking is not only important recreationally for tens of thousands most every year, but provides many gastronomic multiple uses as well.

While it's fun to hike through the old-growth forest mile after mile, it gets to be pretty dreary if you don't have a cutover area once in awhile so that you can get out in the sunshine. And it's almost impossible to see our wonderful mountain scenery where there are no roads or other clearings unless you get through, above, or beyond it to look back, down or across. So clearcutting opens up interesting vistas and creates another multiple use—appreciation of scenery.

Finally, having been privileged in recent years to have observed clearcutting where it originated as the tool to perpetuate forests for man—in Central Europe and Japan—I cannot agree professionally that it is either displeasing aesthetically, whether its reforestation is natural or artificial, or destructive of the land, if done properly. It is reassuring to observe on the slopes of Japan's most sacred shrine, Mt. Fujiyama, recent clearcuts which you can either walk through on your way up to the Shinto shrine on its peak or photograph with your new Japanese camera from the passing window of the 130-mile-an-hour Kodama train on the new Tobeido line. Same thing in the Alps in Switzerland, Germany, Liechtenstein, Austria and Italy—all beautiful silviculture and beautiful scenery—providing the sinews of an economy and the re-creation of the spirit.

So I inquire—why, oh why do we react so defensively everytime someone questions the scientific or aesthetic validity of clearcutting as a silvicultural system? It is honest. It can be beautiful if it's workmanlike. It reproduces the forest—our only source of renewable building materials. It yields many multiple-use bonuses—water, wildlife, scenery, recreation. All it takes to be successful is careful planning and intelligent application. We have 18 million acres of beautiful growing trees keeping the Douglas fir region green now, tomorrow and, if we want it, forever, as silent and visible proof.

Mr. HAGENSTEIN. Thank you.

The second item I would like to ask be included as part of my testimony and included in the record is a paper entitled "The Truth About Clearcutting," which constituted my prepared remarks for participation in a debate before the Southwestern Oregon Forestry Association at Coos Bay, Oreg., on February 11 of this year.

Mr. FOLEY. Without objection, that will also be included.

(The document follows.)

THE TRUTH ABOUT CLEARCUTTING

(By W. D. Hagenstein, executive vice president, Industrial Forestry Association)

Before discussing the use of clearcutting as a scientific forestry method for perpetuating useful species of trees for service to mankind by provision of a permanent supply of building, packaging and communications materials, I would like to seek your help to illustrate the validity of the practice of forestry in the first place.

First, let me ask how many of you had a good supper this evening?

Second, when the program is over, how many of you have a warm, dry place to go to spend the night?

Third, you all appear to be well clothed and shod.

Fourth, I assume that most of you arrived here by some means of transportation—mostly by automobile.

Fifth, it is obvious that those of you who are students here have good educational facilities to help you learn to appreciate the world we live in, how to take your place as a participant in its affairs and above all to acquire some of the tools to earn your living. Those of you beyond student age, like all parents, want still better educational facilities for your children that you were privileged to have.

Anybody disagree with the premise I've set forth as a basis for justifying the practice of forestry as a useful and constructive thing for you, your families, your communities, our State and Nation?

I'd now like to spend a few moments giving you the benefit of my observations, experience and education on the use of clearcutting as a means of harvesting forests for serving Man with their products, for reproducing the forest to get the next crop started and to provide the important bonuses of forestry—rotation of the wildlife habitat, enhancement of our water supplies and furnishing access and environment for every kind of outdoor recreation.

I'm a firm believer in education and research. I also believe that the members of every profession have an ethical responsibility to use their education and research results to serve their fellowman better in every way. I've had the advantage of a splendid scientific education in forestry, largely at public expense, although like most foresters of my age class I like to say, "I earned my way through college." But for every dollar I earned as a timber faller, choker setter and forest fire fighter, the taxpayer pungled up three or four to teach me the rudiments of forestry. I've worked in the woods more than 40 years—all but four years of that in this Region. I've been a professional forester 34 years. For more than 30 years I've been the No. 1 forestry missionary in this great timber growing region in America's Northwest corner. My two principal concerns during this exciting experience have been protection of our forests against their natural enemies of fire, insects and disease—sort of forestry public health and keeping our land productive by prompt reforestation. I'm proud to have been in responsible charge of growing more trees for reforestation in this Region than any other person in its history—with the 20 million being shipped this season from our two non-profit tree nurseries—one each in Oregon and Washington, our record is *one-fourth of a billion trees* in the last 30 years.

To demonstrate what forestry in Oregon and Washington means to those of us who live here and to all Americans, let me cite a few facts:

1. Oregon and Washington have three out of every eight trees in America's woodpile.

2. We produce 32 per cent of the Nation's lumber, 64 per cent of its plywood, 17 per cent of its wood pulp and nearly all of its shingles and shakes.

3. Oregon and Washington are providing the basic building materials of lumber and plywood for three out of every ten homes being built in America and will continue to do so because of the renewability of trees through the practice of my profession.

4. The growing, protecting, harvesting, manufacturing and marketing of forest crops in Oregon and Washington provided direct employment to 143,519 people in 1970. They received wages of more than \$1¼ billion. Their activities brought nearly \$3 billion into the two states. With their suppliers and servicers and the families of both, the forestry enterprise directly supported 1,579,324 people out of a total of slightly less than 5½ million. Beautiful, a basic industry with a permanent supply of home-grown raw material because trees are renewable.

From a lifetime in forestry I've learned a few lessons. Even though I love trees, I love Man more. I believe he is the central figure in our environment. What purpose would there be on this earth without Man? The whole scheme of things ecological is one of accommodation, one species with the other, sometimes for the other, sometimes against. But, in the long run those species which serve human purposes best are those which Man will favor to attain that desirable goal.

Here in the area where I live and work, called the Douglas Fir Region after our principal tree, after Man, trees are paramount. You are never out of sight of them despite hopelessly inadequate protection against fire until as short a time as 30 years ago. We have trees everywhere and after harvesting them by clearcutting for nearly a century and a half we have 18 million acres of cutover land occupied by vigorous, growing forests—beautiful, dynamic, supporting our economy, creating our watersheds, feeding and sheltering our wildlife, and providing a continuously changing and beautiful scene.

The renewability of our trees is our most important asset. Their renewability provides us with wood, our only renewable source of building, packaging and com-

munication materials. Building materials for our homes, schools, churches, highways, bridges and factories. Packaging materials for everything from potato chips to heavy machinery. Communication materials for our newspapers, magazines and books, television and radio tape and photographic film. All these essential human needs can be served by other materials—but *not one of them is renewable*.

While renewability of trees is an undisputed fact, it is also the basis of a lot of contention. We argue whether forests should be harvested and how they should be harvested. We argue how they should be reforested and when. We argue how forests are to serve people's needs and how much and how many. We have some who espouse the cult of exclusivity, whether it be forests solely for homes, forests solely for water, forests solely for scenery, forests solely for recreation, forests solely for wilderness. We argue so much about this sometimes we lose sight of the fact that in a world whose productivity is fixed and whose population isn't, that with our continuous decrease in the ratio of resources to people we must continually learn how to manage most of our lands for all their possible benefits and to manage them better. In other words, we need balance.

While we have many arguments about how our forests should serve Man, we also have many agreements.

We agree that forests should be protected, but we're not always sure who is the enemy!

We agree that forests are beautiful. Some believe only when they're left alone; others, when they're well protected and managed; some in between.

Regardless of how many arguments or agreements we have, the fact that forests are renewable indicates one other fact which no one can ignore. Trees, like people, have a life span. When it's over they die. So, somewhere along the line in the scheme of things, ecological or otherwise, fulfillment of Man's basic needs of food, shelter, clothing and warmth can only be met through the centuries by the harvest and use of renewable materials.

If a chemist were smart enough to develop a wonderful substance like wood, he would be acclaimed forever as the greatest human benefactor who ever trod the earth. For no material serves so many needs. It shelters us, it educates us, it protects our health. While the trees from which it comes are growing, they beautify the countryside, assure a healthy water supply and provide a favorable habitat for wildlife as we manipulate the forest cover through harvest, protection and growth and repeat the process, rotation after rotation. And the forest rebuilds its own fertility through its annual dropping of leaves and twigs, just as it provides the seed to perpetuate its own kind.

Earlier I referred to the need for Man to manage his environment so as to favor those species which serve him best. The most useful tree in the world to Man, Douglas fir, grows best and most in Oregon and Washington west of the Cascades. It grows all over the Western United States and there's a lot of it in British Columbia and Alberta. It even grows down into Coahuila and Chihuahua in Old Mexico. This one species of tree has built more homes for some people than any other in Man's entire history. It is the wood of more than 1,000 uses. It responds to Man's efforts to perpetuate it for his inventory of useful things. The one fact about Douglas fir, which all the scientific research ever done on the species reveals, is that it must have full sunlight to reproduce and grow. While it's true that in some parts of its range it can be reproduced by a system of partial harvest, throughout part of its range and certainly the best parts of it from Northwestern California through Western Oregon and Washington to British Columbia it must be completely harvested if we want to perpetuate it. As I indicated earlier, we have 18 million acres of green, growing, thrifty Douglas fir forests, some of them up to 140 years of age, which, following the normal trend of plant succession, have succeeded their forebearers of the species on the same sites after their parents' harvest. Man didn't just stumble on the need for clearcutting Douglas fir to reproduce it. He observed it by watching what happened following the natural catastrophes of fire, wind, bark beetles, defoliators, diseases and old age. Where Nature did not clearcut Douglas fir, the shade tolerant species following the trend of plant succession, replaced it. Only clearcutting by Man or Nature will allow its survival.

If we are not to add Douglas fir to the list of endangered species and thus prevent or prohibit it from serving thousands of generations of human beings yet unborn, we must perpetuate it by responding to the natural laws which dictate that its harvest be done by a method much older than Man and which kept it here for Man's arrival and subsequent use.

No one would argue that clearcutting of old-growth forests, with their massive amounts of unusable debris, the big stumps and sudden change in appearance are

aesthetically appealing, but neither are unkempt yards, littered streets, vandalized parks or defaced objects of art in public buildings and museums. But the scars of clearcutting are a temporary thing where Man is making a conscious effort to reforest and protect the new trees which in a few years clothe the hillsides, keep changing the appearance, like a new hanging every year in the art museum. The new forest, much better than the old, presents an ever changing scene through a whole succession of plants from the profuse wild flowers, berry vines, grasses and weeds up through the flowering shrubs until all are finally replaced by the young forest as its crowns close and shade out the lesser vegetation. While the succession is occurring the cutover lands provide most of the food for our animals and birds, provide a favorable habitat for our insects on which fish and birds feed, grow the wild blackberries and huckleberries, the delight of people everywhere who have tasted them. And, all the time while the new trees are growing again to harvest size, the plant succession protects our watersheds, shelters our wildlife, satisfies our desires for the sight, sound and smell of beautiful and fragrant forests.

Man has been perpetuating forests by clearcutting since forestry began. As he learned from observation long ago and from a lot of expensive scientific research in the last half century, some tree species just won't germinate, survive or thrive in shade—not even their own. Other observations have pointed the necessity for mineral soil, limited competition for moisture, as well as light, to allow desirable tree species to regenerate and prosper. Others have confirmed the necessity for clearcutting some shade tolerant species because of their lack of wind firmness, susceptibility to disease when scarred by partial cutting and sunscalding of residual trees which soon does them in.

The first generation foresters in the Douglas Fir Region, and some of them are still with us, pioneered our forest practices. They first preached protection—run the smoke out of woods. They knew we couldn't grow new trees to take the place of the harvest if we were to continue burning over the land so frequently as we were doing up to only 30 years ago.

Once they were satisfied that the Region was on its way to successful fire prevention and control—because the landowners, private, State and Federal, were willing to spend enough money to do it, they turned their attention to reforestation. First, they concentrated on natural reforestation because they saw it everywhere they looked where fire, brush competition or unworkmanlike harvesting had not precluded it. They spent a major share of their time in the woods—watching, measuring, experimenting, so they could understand how each tree species reacted to specific treatment. In the case of Douglas fir, our principal species, they soon established as a biological fact its intolerance of shade or, putting it another way, its love and need for full sunlight throughout most of its natural range. They also learned that our second most important species, western hemlock, despite its tolerance of shade, developed best in even-aged stands. These facts indicated scientifically that clearcutting was the way to go if one of the two main purposes of timber harvesting was to be fulfilled—perpetuation of the species through reforestation.

Our pioneer forest observers and investigators noted too that on the drier southerly and westerly slopes reforestation was far more difficult than on the moister easterly and northerly slopes. The limiting consideration was soil moisture and indicated a place for modifying clearcutting by shelterwood which leaves enough of the original stand at harvest to create shade, provide seed and then in a few years, when the new crop is on its way, also be removed, so that the new forest looks exactly like a clearcut with new trees of the same age.

Our pioneer foresters recorded the history of Nature's clearcutting—fire, wind, insects, disease and old age. All of the vigorous young forests in the Region where timber had not been harvested previously are the result of natural clearcutting—both a biological and historical fact.

There's plenty of carefully measured evidence that clearcutting, full reforestation and precommercial thinning for ideal spacing will utilize the productivity of our growing timber soils and climates better than any other system.

An outstanding forestry fact about the Douglas Fir Region is that after 145 years of clearcutting in our 26-million acre forest, we have 18 million acres of new forests from last year's one-year old, inch and a half tall, natural and artificially sown seedlings and twelve- to fifteen-inch two- and three-year old- trees planted by hand to tall, straight second-growth up to 140 years of age. Three million of the 18 million acres resulted from Nature's clearcutting—the other 15 million from Man's. Of the latter, only about two million acres resulted from artificial reforestation—the rest was Nature's with a big assist from Man who kept down the fire.

Lest you think all my forestry facts relate solely to the wood from the harvest by clearcutting and then getting the land reforested promptly, let me enumerate briefly some other results of clearcutting. The multiple bonuses of clearcutting in this Region are many. First, clearcutting transforms a biological desert into a favorable habitat for wildlife by providing forage. Lewis and Clark, in their journals, complain bitterly of the lack of four-footed game in 1804-5 when they wintered over in our Region. Things have changed because the critters have a continuously rotating and favorable habitat through clearcutting of one to two per cent of a tree farm, national forest, BLM unit or State forest annually. Another bonus is that clearcutting is good for fish. Their principal food, insects, develop best in cut-over land where there's something for them to eat. Clearcutting is an adjunct to the foodchain—whether by Man or Nature. Only difference is—Nature wastes the crop, Man uses it!

Outstanding watersheds in the Douglas Fir Region are another bonus of clearcutting where the old-growth is replaced with higher water yielding young trees. Best example is Seattle's 90,000-acre Cedar River Watershed where forest management by clearcutting and effective protection have abundantly supplied pure water and timber for 65 years.

Another bonus of clearcutting is the outstanding recreation and gastronomic delights that wild blackberries and huckleberries have provided as part of the natural plant succession until the new timber crop closes them out. However, they are rotated just like the forage for wildlife.

The last bonus of clearcutting I would note is its opening up of vistas so we can see our forests and mountains. I'm sure this is controversial, but appreciation of scenery is an aesthetic asset, but you've got to see it before you can appreciate it.

So we've inventoried some of the advantages of clearcutting.

Clearcutting salvages the remains of decadent old forests for society's essentials—homes, jobs and taxes.

Clearcutting reproduces our forests and perpetuates useful species.

Clearcutting maximizes potential productivity.

Clearcutting reduces hazard of forest destruction and waste by fire, insects, disease and wind.

Clearcutting creates healthy watersheds.

Clearcutting develops and rotates a favorable wildlife habitat.

Clearcutting provides wild berries for recreation and food.

Clearcutting lets us see the forest and the surrounding country.

Clearcutting is good, clean, productive, scientific and honest.

These then, are the advantages of clearcutting.

The principal disadvantage of clearcutting is that it is practiced out in front of God and everybody. It has high visibility. Some are shocked by it because they don't really understand it. Another disadvantage is that clearcutting lends itself to hit-and-run propaganda. Forestry's detractors take pictures which show the stumps, but never the homes built from the harvest. They show the logging debris, but not the jobs. And they never show the reforestation.

This is the truth about clearcutting.

For more than 20 years we have compiled data annually on what is occurring on the industrial tree farms of the Douglas Fir Region. We have accurate data on their timber harvest, their protection against fire, their reforestation and all the other activities on the land that together constitute the practice of forestry.

Data for the last five years ending 1969 comparing the amount of reforestation with the amount of land harvested by clearcutting are very revealing. For example, the area clearcut in 1965 was 88,645 acres; 81,015 were reforested. In 1966, 89,429 acres were clearcut; 105,550 reforested. In 1967, 82,651 acres were clearcut; 96,678 were reforested. In 1968, 52,973 acres were clearcut; 96,187 were reforested. In 1969, 97,122 acres were clearcut; 125,277 reforested. You might wonder why more acres were reforested than harvested. The explanation is some of the areas reforested were those which were idle due to inadequate protection or were reclaimed for productivity by site preparation and planting or seeding to rehabilitate them. This has been a continuing and increasing trend of forest management on our industrial tree farms.

Forestry must follow natural laws to be successful. Congress didn't pass the laws which dictate that some tree species must be clearcut to reproduce them and prevent their addition to the list of endangered species. Nor can Congress repeal such laws.

Finally, no professional forester is so inflexible that he won't respond to new scientific evidence, but neither is he so gullible that he'll respond, kneejerk like,

to emotion. The forestry profession has served America well by protecting, managing and improving the forest environment for 72 years. To stop now and bow to popular clamor which is not against clearcutting, but is really against forestry, instead of sticking to the scientific necessity of harvesting those species and forests whose natural laws demand clearcutting would be a rank dereliction of duty, cowardly and unethical. What we must do is to practice constructive forestry to the best of our ability, do it in the most workmanlike manner and continue to strive to do an ever better job of serving mankind with its only renewable source of building, packaging and communications materials, while enjoying the bonuses of well-managed forests—water, wildlife, recreation and scenery.

Mr. HAGENSTEIN. Also, it is too long, but there is a bibliography on clearcutting in national forests prepared at Colorado State University by Dr. Charles W. Barney and Robert E. Dills, the latter being a consultant to the Council on Environmental Quality on the clearcutting issue.

I would like to give this to the committee for its files.

Mr. FOLEY. Without objection, that will be included for the file.

Mr. HAGENSTEIN. Thank you.

The Congress of the United States has appropriated about a half billion dollars in the last 50 years to enable the Forest Service to study the biological and ecological aspects of all American timber species as well as their protection and use. After this period, the accumulated scientific knowledge is clear as to which species of trees must be harvested by clearcutting in order to reproduce their kind and keep them in the inventory of useful trees for human benefit.

Any exhaustive study of American forestry literature would reveal that there are literally thousands of papers written about most of the significant American timber species and an enumeration could be developed therefrom very quickly as to which species are endowed with the ecological necessity of clearcutting for their perpetuation.

Recently the Senate Interior Committee, in the issuance of a report entitled "Clearcutting on Federal Timberlands" recognized, in the harvesting guidelines it sets forth, that clearcutting should be used only where "it is determined to be silviculturally essential to accomplish the relevant forest management objectives."

If such objectives includes the reproduction of the forest and therefore perpetuating desirable species, then it is nothing short of ridiculous for proposals to be made seriously to the Congress which would authorize a commission to study clearcutting as a political rather than the biological and ecological subject it is.

It is significant to note also that the Subcommittee on Interior and Related Agencies of the House Appropriations Committee in its Report No. 92, dated June 8, 1972, urged that the Forest Service, the Bureau of Indian Affairs, and the Bureau of Land Management follow the clearcutting guidelines recommended by the Senate Committee on Interior and Insular Affairs.

If the authors of the bills before you want to strike a blow for the environment, and I say this most respectfully, they should put their money where their mouths are by asking Congress to provide the seed and seedlings necessary for reforesting the nearly 5 million acres of idle national forest lands to get them back busy growing trees for the American people once again.

How much more sense that would make than spending \$2.5 million to study something we already know.

Therefore, Mr. Chairman, Industrial Forestry Association recommends that H.R. 14354, 14888 and 15042 not be reported out of this committee. They are completely unnecessary for effective management of America's forests. Any results of such studies as they propose will only confirm the scientific sense of clearcutting, already well-established for many tree species growing in the United States.

Let's add the \$2.5 million they want for the study to the already inadequate amount being appropriated annually to the Forest Service for reforestation.

Thank you very much.

Mr. FOLEY. Thank you.

Mr. Teague?

Are there any questions of the gentleman?

Mr. BAKER. Mr. Chairman?

Mr. FOLEY. Mr. Baker.

Mr. BAKER. You seem to have considerable knowledge, far beyond what this committee might have and possibly many, many of the critics. What size areas do you consider to be suitable to clearcut if you were going to engage in clearcutting and how do you differentiate between the areas to which you referred, that some are suitable to clearcutting so far as reforestation is concerned and some are not?

Mr. HAGENSTEIN. It is just like everything else. It is like the practice of every other profession, you have to analyze the situation on the ground, you have to diagnose the patient, as it were, and pick the best combination of situations that will do the kind of job you are trying to do, which is, first, to get complete utilization of the harvest you do make and keep the land productive by getting it back to growing trees in the shortest possible length of time.

In some areas clearcuts should be limited to an acre, depending on the circumstances; in other areas you might make it 2 or 300 acres.

In our part of the country a typical 1 day in the forests is 30 to 40 acres. A lot of them are less, depending on the local situation of soil, slope, where you can build a road and the engineering requirements of getting there physically, plus the additional thing that is paid attention to by the Forest Service in increasing amounts; that is, in trying to adapt the cutting boundaries. They have the chance of doing that because in most of the national forests they own most of the land so you do not have the problem of alienated property ownership, where you have two or three ownerships in the same creek where they cut across property lines in north and south, east, and west directions.

The Forest Service has the ability to cut along the contour, so they can make them more attractive esthetically to the traveling public. It is making a conscientious effort in our area to do this.

Mr. BAKER. Can you categorize between species as to which respond to clearcutting so far as regeneration is concerned and those that do not?

Mr. HAGENSTEIN. Yes, sir; that is, of course, the prime silvicultural consideration. God endowed the species with the requirements of light and moisture that it must have.

Technically we refer to those that must have full sunlight as intolerant species, intolerant of shade. Douglas fir, the species that I am principally concerned with, is one such species.

In your part of the country, the southern pines, the yellow poplars in the coves of Tennessee are species that have the requirement for full sunlight, if you want to reproduce them and keep them in useful inventory for man.

Other species that are susceptible to partial cutting, for example, in our part of the country, east of the Cascade Mountains in Oregon, are the Ponderosa pine in the forests east of the mountains, the principal one. These are even-aged stands made up of uneven-aged groups.

You log the mature groups and leave the immature groups, because that is the way the forest grows and that is the way you manage it.

What I am really saying is that you pay attention to the circumstances in each individual case. To draw blanket rules—they are useful as guidelines, just like telling a doctor how to remove the appendix, you had better leave the surgery, cauterization, removing the appendix and sewing the parts together, to the man trained in the field. That is the responsibility of you gentlemen in the Congress, to set the guidelines and policies, the generalized objectives that you think the national forest should attain for the benefit of most of the American people, and then go out and hire the most competent people you can to carry out these policies and implement them by the practices on the ground.

Mr. BAKER. Did I understand you to say that you would recommend without qualification to establish policies on an individual basis rather than the broad guidelines of clearcutting regardless of the area that is under consideration, whether it is in my Eastern part of the United States or your Western part or whatever, that it just cannot be done on a broad general basis and be acceptable forestry practice?

Mr. HAGENSTEIN. I do not think you can practice forestry by remote control. I think it is a question of making a decision on each individual area of land with the species of trees involved and the objectives of what your management is, what you are trying to do, whether you are trying to run the things as a single-crop entity or merely getting timber or whether you are wanting to follow the multiple use objectives that you gentlemen have already established.

The legislation came out of this committee in 1960 for managing these lands for all we can get out of them in such a way that the combination of results and benefits is the maximum for the American people that are the owners of the lands.

Mr. Baker. Just one more question.

I think we all recognize the broad needs for the products of the timber industry and the increase which will be generated in the years to come. How closely do you consider that the private sector—the private ownership of timberlands—could they supply the needs without encroaching on the national forests?

Mr. HAGENSTEIN. Well, sir, with the national forests having about 60 percent today of the total current inventory of timber, because up until this time in our history most of the country's timber needs have been met from the private lands, which means a lot of them are occupied by young trees, many of them requiring several decades to grow up to merchantable size, the national forests are going to carry the load while we bring these young trees up to usable size again.

I would say the long-term potential contribution of the 90 million acres of commercial forest lands in the national forests is perhaps a

quarter of the average timber needs of our country as projected in the next several decades.

Mr. FOLEY. Thank you, Mr. Hagenstein.

Any further questions?

Mr. HAGENSTEIN. May I personally thank Mr. Teague for his expression about forest protection and the need for doing a better job of looking after forest fires.

I happen to be a president of the Keep Oregon Green Association this year. We have been fortunate this year. You live, however, in a different climate and you have had a more difficult job.

Mr. TEAGUE. Yes. We have a real difficult problem in southern California. I know something about it.

In one fire I lost a stable, pumphouse, and front porch furniture. So I have experience with forest fires.

Mr. HAGENSTEIN. I should say you do.

Mr. FOLEY. Thank you.

The next witness will be Mr. Christopher Colt, associate Washington director, Trout Unlimited, 1025 Connecticut Avenue NW., Suite 911, Washington, D.C.

STATEMENT OF CHRISTOPHER COLT, ASSOCIATE WASHINGTON DIRECTOR FOR TROUT UNLIMITED

Mr. COLT. Mr. Chairman, thank you very much. Mr. Chairman and members of the committee, it is a pleasure to be here this afternoon.

My name is Christopher Colt, associate Washington director for Trout Unlimited. Our membership is comprised of 15,000 trout, salmon, and steelhead fishermen organized into more than 150 chapters in 35 States.

Trout Unlimited was formed because of concern over the ever-increasing loss of America's once abundant cold water fisheries being laid waste by reckless abuse, mismanagement, and a total lack of insight into what the eventual outcome of our environment will be if existing problems are not identified and corrected.

The destruction of our watersheds, deterioration in the quality of trout, salmon and steelhead fishing is what most concerns Trout Unlimited. Our goal is to protect, preserve and enhance the cold water fisheries of this Nation through scientific study, research, education, and physical improvements of the watershed itself. We believe that sound land and water management go hand in hand with providing water quality vital to man and trout.

Trout can be compared to the canary once used as a warning system by miners to detect lethal gas. When gas was present in a mine the canary died, warning the miners and allowing them to escape the fate of the canary. Trout serve as a warning system to man too. Trout live in a demanding environment. In order to survive they need clean, cold water. When trout die in a stream or river, it's a warning to man that water quality has been adversely affected.

One problem confronting us in our efforts to protect and conserve the trout's habitat is clearcutting. Clearcuts to, through, or even near a stream or river tear and scar the soil, strip the banks of shade cover which destroys the delicate ecosystem of streams and the trout, salmon, steelhead, and other life within it. Clearcutting causes erosion of the soil, thereby producing siltation in the stream which destroys

the spawning beds vital to natural reproduction. The loss of stream-side vegetation, used to shade and cool the stream, makes the water temperature rise to limits intolerable to trout and other life. The result is the loss of one more of America's great natural resources.

Trout Unlimited subscribes to the national policy of multiple use and the sustained yield of our natural resources as set forth in Public Law 86-517. But, when commercial and industrial users denude vast sections of public land, destroy complete watersheds and serve the concerned public with meaningless platitudes then continue to carry on with their destruction, as though nothing was said, then it's time for a change. Trout Unlimited has no quarrel with lumber companies making a profit. When, in the process of making a dollar, they ignore public interest and get away with it under the protection of the Forest Service, whose charge is to manage our forest resources, it's time for a change. When the sale of timber from public lands is allowed to override the great concern of most Americans over clearcutting practices, then it's more than time for a change. In March of this year the Subcommittee on Public Lands, in addressing itself to the problem of clearcutting on Federal timberlands, issued a report to the Committee on Interior and Insular Affairs. One item that came out of the committee as a guideline was that: "Federal timber sale contracts should contain requirements to assure that all possible measures are taken to minimize or avoid adverse environmental impacts of timber harvesting, even if such measures result in lower net returns to the Treasury." We don't feel this has been done.

The committee in its concluding remarks said in part:

The subcommittee recommends that the Federal Government take prompt action toward bolstering the confidence and support of the American people for our Nation's forestry program.

They further asked for the establishment of a prudent policy for regulating clearcutting on the Nation's forest lands.

Mr. Chairman, to see the destruction caused by clear-cutting in Far Western States like Montana's Bitterroot Forest, the States of Washington and Oregon on the Pacific slope with their vast clear-cuts, makes it clear that this has not been done.

Sights like these are not easily forgotten. It has shaken the confidence of T.U. membership and other Americans, that national forest resources are not being managed in the public interest. The time for reform in silviculture is past and permanent damage has been done.

In order to lay to rest the questions of clear-cutting and the effect it has on the environment, Trout Unlimited moves to support bill H.R. 14354. In the hope this study will provide the answers and settle once and for all the problems posed by clear-cutting. Thank you, Mr. Chairman.

Mr. FOLEY. Thank you very much, Mr. Colt.

Questions of Mr. Colt?

Mr. Colt, we appreciated your testimony. I understand that a commission established along the lines this bill proposes would settle some remaining questions yet unanswered; is that correct?

Mr. COLT. No, the primary reason for our supporting this bill, which brings up the question of a study on clear-cutting, we feel there has been enough evidence shown that a further study of this nature would

not do that much more benefit in practicing policies for the Forest Service or the timber industry. We simply feel the study has been made by absolutely every organization that could possibly be called upon with the exception of the Federal Government. If this is the only way that we can clearly define, definitely set once and for all the record straight what needs to be done with our national forests and products that come from within them, then we feel this is the only way to go.

Mr. FOLEY. Thank you very much. We appreciate your testimony.

Mr. COLT. Thank you.

Mr. FOLEY. The next witness will be Mr. Gordon Robinson, forestry consultant, Sierra Club, San Francisco, Calif.

Mr. Robinson, you have appeared before the subcommittee before on other occasions and we are very happy to see you again.

STATEMENT OF GORDON ROBINSON, FORESTRY CONSULTANT, SIERRA CLUB

Mr. ROBINSON. Mr. Chairman, I am appearing before you at the invitation of Congressman John G. Dow.

The Sierra Club strongly supports H.R. 14354 and urges its enactment. Recent studies made for the administration through the Council on Environmental Quality have been confused and misdirected for the following reasons:

(1) The basic problem giving rise to widespread complaints about management of the Federal forest lands has not been explored. The real difficulty is that the Forest Service and the Bureau of Land Management have become committed to selling timber in quantities far beyond that which can be sustained within the constraints of multiple use. The Forest Service has increased the allowable cut from 5.6 billion feet in 1949 to 13.5 billion feet in 1970. Likewise the Bureau of Land Management has substantially increased its allowable cut during the same period of time. These increases are not the result of improved forest practices, of increased growth, or expansion of the amount of land under their jurisdiction. While they are partly justified by economic factors, they are mostly the result of more or less arbitrary increases justified by a long series of rationalizations to meet the demands of industry. In my work as forestry consultant for the Sierra Club I have had occasion to look into allowable cut determinations on three national forests—the Bitterroot in Montana, the North Tongass in Alaska, and the Six Rivers in California. In all cases I found the allowable cut to be somewhere between two and three times as high as it should be.

Inasmuch as these determinations have been made under general instructions emanating from Washington, and because the trend toward increasing the allowable cut has been virtually uniform throughout the system for the past 20 years, I believe wholesale clearcutting as now practiced on the public lands is a symptom of over-commitment. The administration has misjudged popular concern as having to do merely with appearances. I assure you the problem is much deeper and requires thorough impartial study.

(2) Clearcutting is not adequately defined. In the "Terminology of Forest Science," published by the Society of American Foresters, "clear-cutting system" is defined as "a Silvicultural system in which the old crop is cleared over a considerable area at one time. See Patch Log-

ging." Then we find "Patch Logging" defined as "a modification of the clearcutting system whereby patches of from 40 to 200 acres are logged as single settings." In contrast with this Dr. Leon Minker, Professor of Silviculture at Syracuse, says that a clearcut consists of removing all of the timber from an area the diameter of which is more than one and one-half times the height of the surrounding timber. He is no exception; Foresters simply do not agree on definitions. Consequently, there is a great deal of confusion in which factors relating to growth of timber in small openings of from $\frac{1}{2}$ to $1\frac{1}{2}$ are being used to justify total removal of timber from areas so large they involve entirely different phenomena. (For this reason I have insisted that excellent forestry consists in part of keeping the openings no larger than necessary to meet biological requirements.) Because of this confusion, much of the debate over clearcutting to date has been meaningless. And the biological factors which concern us remain inadequately explored.

(3) We have not heard from academic environmental study groups, although the President's Council on Environmental Quality did obtain reports from five forestry schools. This is of major importance because it overlooks the fact that our forestry schools generally concern themselves primarily with studies having to do with production and use of wood. They tend to emphasize economic, engineering and management considerations, but pay only cursory attention to other important areas of concern.

RECOMMENDATIONS

I urge that the bill be passed with the recommendation that the Commission so established concern itself with the two major areas of investigation.

First, thoroughly investigate allowable cut levels and the possibility of bias in their determination.

I contend there is bias in the many specific decisions that must be made in the process of taking an inventory of forest resources, developing a timber management plan and determining an allowable cut. These include such things as rotation age, definition of commercial forest land, size of merchantable trees, formula for calculating allowable cut and many more. Most of these decisions may be valid over a fairly wide range of values, so that ordinarily one cannot say that any specific decision is right or wrong. Moreover, when combined they result in exaggerated allowable cut determinations. This is the basic cause of the complaints about management of our public forests. Specific topics recommended for study are these:

(a) The definition of commercial forest land. Last December the Inter-Mountain Forest and Range Experiment Station published a report entitled, "Stratification of Forest Land on the Western National Forests" in which the authors showed that 22 percent of the land classified as commercial forest land on six national forests was misclassified. This is an excellent study and a very well written report. However, it did not go into the question of definition of commercial forest land, although the authors point out that the one presently used has brought about the inclusion of much submarginal land in the timber resource base. This is the "timber mining" referred to in the now famous Bolle report.

(b) Length of rotations. An investigation of the question is needed as to whether rotations are too short. Much timber is being sold today in anticipation of a market developing for trees of much smaller size in time to provide a sustained yield. This is a distortion of the basic principles of forestry. Volumes sold now should be equal to or less than the amount that can be continuously provided with the same minimum size and without a decline in quality. Future development of a market for trees too small for commercial use today should be regarded as a possible bonus, but should not be depended upon to provide a sustained yield.

(c) The agencies are presently liquidating so-called overmature timber which should preferably be allowed to remain. I am speaking now of strong healthy trees which are growing and are secure. By overmature I merely mean trees which are older than the presently selected rotation age. These trees should be allowed to remain for the following reasons:

- (1) to grow high quality timber;
- (2) to provide a seed source in the event of a disaster;
- (3) to provide shade and moisture of transpiration that minimizes the risk of fire;
- (4) to enhance the variety of age classes thus minimizing hazard from disease and insects;
- (5) to inhibit spread of root diseases which build up in decaying roots in clearcuts, sometimes to epidemic proportions;
- (6) to hold the slopes against landslides on steep lands. There is much research in recent years indicating that a great deal of land, particularly along the Pacific coast and Alaska, is steeper than the angle of repose of the soil. The roots of standing trees hold these mountains together. In these situations, clearcutting by whatever method leads to landslides when the roots decay.
- (7) such trees should remain in order to provide humus for watershed protection and to aid the percolating of water into the soil;
- (8) standing dead trees are frequently required habitat of hole-nesting birds and predatory mammals. A statement concerning this is being presented by my colleague, John Smail. I am suggesting here that some large trees must be allowed to remain until they die in order to become the necessary habitat for various birds and mammals essential for biological control. Dr. Robard of Alaska who is an authority on eagles explains that eagles' nests weigh from 2 to 3 tons. He says that trees must reach at least 40 inches in diameter in order to be strong enough to support such nests.
- (9) older trees must be allowed to remain in order to support lichens. It has been estimated that the virgin forests in western Oregon, for example, the older trees support an average of 200 pounds of lichens per acre. Twenty-five percent or 50 pounds per acre of these lichens are nitrogen fixers. I do not know how many pounds of nitrogen per acre are provided annually by these organisms. It is certain, however, that even-age forests grown on short rotation cannot support the lichens and therefore will lose an important source of essential nutrients.

(d) The formulae used for determining allowable cuts needs to be investigated. It is common practice today on the public lands to employ

techniques for calculating allowable cuts which accelerate removal of old growth timber beyond rotation age.

(e) Combining of working circles. Another specific manner in which excessive allowable cuts have been determined is through the process of combining working circles. A working circle is an area within which sustained yield is practiced. In the past, western national forests typically were comprised of 5 or 6 working circles. In recent years, however, these have been combined on many national forests so as to make one working circle of the entire forest. The practical result of this is to make it possible to sell accessible commercial timber on the strength of growth estimates applying to inaccessible timber elsewhere in the forest. How much of that is misclassified in the manner described in the Wikstron-Hutchison report on Stratification is not known.

Second. Clearcutting per se requires further study. As I mentioned above the issue of clearcutting has been confused by lack of a clear definition of the term itself.

I cannot urge too strongly that whoever arranges for specific studies under this act call upon specialists in the various fields peripheral to forestry in order to bring out the principles of forest management recommended by scholars in a wide variety of environmental studies. Such fields include, but are not limited to, the following: ornithology, entomology, fish biology, mammalogy, mycology, soil science, silvics, and hydrology. Furthermore, any such studies should be coordinated with the International Biological Program.

Finally, a creative effort must be made to put all the scientific research brought out in these studies together into general principles which are definite enough to secure requirements of the several specific fields peripheral to forestry, yet broad enough to encourage creativity on the part of those employed to manage our public forests. I am attaching a copy of the Sierra Club position on clearcutting and forest management which I prepared on behalf of the Sierra Club at the request of the Council on Environmental Quality. This represents my concept of how this can be done.

A gentleman who heard of our appearance wanted to attend but was unable to afford the expense of the trip and has provided me with a statement which he asked to have included in the record. There is a supply of them here for you. He is John Smail, ornithologist, working for the Point Reyes Bird Observatory. I think that you will find it interesting.

Mr. FOLEY. Thank you very much. Without objection it will be included in the record.

(The statement follows:)

POINT REYES BIRD OBSERVATORY,
Bolinas, Calif., June 19, 1972.

HON. JOHN L. McMILLAN,
House Agricultural Committee,
House of Representatives, Washington, D.C.

Point Reyes Bird Observatory is a non-profit research corporation headquartered in Bolinas, California. Its research focuses on the ecology of non-game birds.

I do not think it necessary to defend the idea that forest birds serve a definite function. They are the most efficient, and for that matter, the cheapest form of insect control in the forest. To quote but one example, a single woodpecker (Black-backed three-toed Woodpecker) has been estimated to be able to consume the larvae of highly destructive wood-boring beetles (family Cerambycidae) at the rate of 13,675 per bird per year.

It is a fair generalization that the more varied and numerous the bird population of a forest is, the broader the spectrum of natural insect control. An analysis by Observatory staff of 9 breeding-bird censuses in coniferous forests in California, Colorado, and South Dakota revealed that 25% of the total number of birds using these forests are of species that nest in holes. Hole-nesting species require older trees with some decayed portion in order to breed successfully (and feed large broods of young on destructive insects) although they forage on trees of various ages. Studies in Europe especially have shown that the numbers of certain insectivorous hole-nesting species can be increased in a forest by providing suitable habitat.

Any forestry practice producing solid stands of trees of the same age reduces the diversity of bird species able to breed, and this in turn severely reduces possible insect control. Clearcutting is the most drastic example of this. From an ornithological point of view a clear-cut stand is open to the following objections:

1. In the short term, habitat for both branch- and hole-nesting birds has been removed. This may well affect the health of surrounding stands by reducing their protection against harmful insects.

2. In the long term, the area, if enough topsoil is left to support reforestation, will produce trees of the same age and perhaps of the same species. In addition to causing the added infestation hazard known to result from solid stands of one species, this will produce no habitat for hole-nesting species and the reduced diversity of bird species will provide reduced protection against harmful insects.

It seems to us that there are grave ecological consequences to clearcutting from this one viewpoint alone. Regrettably, these considerations are by no means second nature to our foresters, as the routine practice of felling snags clearly indicates. It should be stated too, in all fairness, that the ecology of forest bird species is imperfectly known and their potential in insect control not yet fully realized, even among ornithologists. For a just appraisal of the consequences of clearcutting we would recommend the following as basic preliminary steps:

1. A study be made of the bird (and insect) populations of representative clear-cut areas and the surrounding stands.

2. A thorough search of the available literature be made.

3. Ornithologists specializing in forest species be consulted on general guidelines in forest practices.

4. Future clearcuttings be subject to controls of the "environmental impact statement" type with input from ecologists.

I regret the brevity of this statement which has been forced upon me by short notice of this hearing. The experience of Point Reyes Bird Observatory in censusing forest areas is at the disposal of the Committee. We hope to cooperate with the U.S. Forest Service in a pilot study of a forest area with an impending timber sale in the Inyo National Forest, California.

May I request that, even though I was unable to present this statement in person, it be made part of the printed record of the hearing. I believe that it contains important considerations perhaps not raised in other testimony.

JOHN SMAIL, *Executive Director.*

Mr. ROBINSON. I am attaching a statement I prepared on behalf of the Sierra Club. This is, incidentally, a slightly condensed version of the statement I prepared for the Council on Environmental Quality, setting forth the Sierra Club's position on even-aged management. I would appreciate it if you would include this in the printed record.

Mr. FOLEY. That will be included without objection.

(The information follows:)

[From the Sierra Club policy paper No. 2]

THE SIERRA CLUB POSITION ON CLEAR-CUTTING AND FOREST MANAGEMENT

(By Gordon Robinson)

The Sierra Club encourages the use of selection systems of forest management on commercial forest lands, and discourages even-age management. It supports forest practices that promote and maintain a mixture of species and ages of trees, but it opposes monoculture. It has faith in the natural forest, but is skeptical of the

artificial forest. It expects our public agencies to practice excellent forestry on our public commercial forest lands, and it supports such measures as will promote excellent forestry on private commercial forest lands.

EXCELLENT FORESTRY DEFINED

Excellent forestry has four characteristics: It consists of limiting the cutting of timber to that which can be removed annually in perpetuity. It consists of growing timber on long rotations, generally from one to two hundred years depending on the species and the quality of soil, but in any case allowing trees to reach full maturity before being cut. It consists of practicing a selection system of cutting wherever this is consistent with the biological requirements of the species involved and, where this is not the case, keeping the openings no larger than necessary to meet those requirements. Finally, it consists of taking extreme precaution to protect the soil, our all-important basic resource. The advantages of such forestry are overwhelming.

LOW FIRE HAZARD

To begin with, the lowest fire hazard is in the full-canopied old growth forest. The risk of losing timber to fire is therefore least where the forest is managed on a selection system in which as full a canopy as possible is permanently maintained. Fire danger is a function of temperature and moisture. By providing shade, the closed canopy of a dense forest keeps the material on the ground cool. Also, air does not circulate freely under a closed canopy and is humid from moisture given off by trees. In contrast, young plantations are highly inflammable because they tend to be hot and dry, and the combustible leaves, frequently having an oil content, are close to each other and to the ground.

While foresters frequently insist upon the felling of all dead trees during logging operations for fire suppression purposes, it is generally overlooked that these very trees are required habitat for many birds who perform great services in controlling insect enemies of our forests.

LOW WINDTHROW HAZARD

Light selective logging, or clearcutting in small openings (group selection) provides maximum assurance against windthrow. The even-aged forest canopy has a generally well-defined, nearly horizontal upper and lower limit. The crowns are short and concentrated at the top of relatively slender stems. Such trees are not at all windfirm and may require the stand to be cut all at once unless special provisions are made to minimize severe windthrow. In uneven-aged stands the crowns are commonly larger and more dense but since they develop in irregular canopies and are subjected to wind stresses all their life long, they develop much greater windfirmness and have stouter boles.

MINIMUM RISK FROM INSECTS AND DISEASES

Damage from insects and diseases is far more severe where clearcutting is practiced than in the selection forest. Where large areas are clearcut, as in conversion to even-age management, certain insects may breed in the slash in great numbers and later attack the young reproduction. Where clearcutting is practiced there is always a tendency to establish plantations of one species rather than mixtures without regard as to how the planted species naturally occur. A pure stand—one composed of a single species—forms an ideal situation for a disease to build up to epidemic proportions. Infection is direct and rapid from tree to tree and if one species is destroyed there is nothing left. The most hazardous pure stands are even-aged stands because fungus parasites are often virulent during only one stage of the development of the trees. Pure stands of trees outside their natural range are particularly liable to difficulty. Pure stands are particularly susceptible to disastrous outbreak. For instance, outbreaks of the hemlock looper have been especially destructive only in stands composed of a high percentage of hemlock. Where a heavy mixture of other species occurs, infestation soon thins out and loses its destructive power. It is particularly important that the cuttings in stands that normally grow as mixed types should not favor the leaving of the single species. Since most insects and diseases of forest trees are limited rather sharply to one or a few host plants, mixed stands offer far fewer opportunities for epidemics than do pure stands. In the case of insects, every tree in a pure stand offers food and breeding ground. In the case of fungi the liberated

spores find favorable hosts everywhere. In both cases destructive concentration can readily be built up in pure stands.

YIELD IS OF MAXIMUM VALUE

Forests can and should be managed to produce a continuous even flow of mature timber. Old growth is far superior to young growth, however one looks at it. Stumpage prices are much higher for old growth than for young growth timber. Furthermore, it is anticipated that young growth stumpage prices are not likely to increase substantially over the next 25 to 50 years. Prices of higher-grade commodities will increase substantially, but that can't come from young growth. There will be a great increase in the use of pulp, but the great quantities of young growth available will hold prices down. In pulp, furthermore, quality of fibre will become an important factor.

In the dense canopy of a selection forest the trees tend to grow slowly. This is not to say that the total timber grown is any less on a volume basis than in even-aged stands. Returning to quality considerations, the suitability of young growth for veneer is greatly diminished because it is not only undesirable for veneer faces but also veneer cuts are rough; the numerous knots tend to chip the knife although lathe settings are no more critical than in old growth. If lumber is produced, the yield of high grade material is lower than from old growth trees.

WOOD FIBRE IS HIGHEST QUALITY

As a tree matures and grows in girth, the cambium produces longer and thicker walled cells. The length of fibres laid down in new growth in conifers increases with the age of the tree. Length generally varies from 1 millimeter at age one to about 4 millimeters at age 70, after which length remains constant with increase in age. This means that where timber is being grown for fibre, the longest fibres occur only in that part of the tree which has grown after age 70. It would seem to be good business, therefore, to grow trees to an age of 100 to 200 years and to use for pulp chips the slabbing from squaring or rounding the logs, and making high quality lumber and plywood from the remainder of the core. This is essentially what is done with our virgin timber today, but not with trees grown on a short rotation.

What has been said about the length of fibres is true also of the density or strength of fibres. That part of the tree which has been laid down by the cambium layer after age 70 contains the strongest fibres as well as the longest ones.

That part of the conifer grown below 40 to 50 years of age is inferior in having a high proportion of extractives. The yield of fibre will be small and the amount of dissolved material that must be disposed of is proportionally higher than in pulping slow-growth old wood. This adds to production costs as well as water pollution problems with pulp mills.

IT COSTS NO MORE

We hear much talk these days from both foresters and industry to the effect that they cannot afford to grow trees on a long rotation or to great size and that they must clearcut for economic reasons. These appear to be false calculations. A recent study showed that the cost of felling, limbing, and bucking trees from 45 to 48 inches in diameter was \$7.04 per thousand board feet in contrast to \$18.63 per thousand board feet for trees between 12 and 16 inches in diameter. Similarly, the cost of yarding and loading was twice as much for trees 12 inches in diameter as it was for trees 30 inches in diameter.

The February 1969 issue of the *Journal of Forestry* reports the findings of a research team studying comparative logging costs under four cutting specifications ranging from single tree selection to clearcutting. They concluded that logging costs from standing tree to truck do not differ appreciably with cutting method, and the forest manager is therefore free to choose a cutting technique on the basis of management and silvicultural considerations other than costs.

A recent study in the redwood region indicated a logging cost of \$11.37 per thousand board feet in a selection forest and \$11.45 per thousand board feet where clearcutting was practiced. This was a study conducted by the U.S. Forest Service in the Redwood Purchase Unit. A similar study made in the pine region showed that where clearcutting was practiced, involving 17,000 board feet per acre, 133 man minutes per thousand board feet were expended. Heavy selection cutting involving 13,000 board feet per acre required only 118 man minutes per thousand board feet. But a light, sanitation-salvage cut involving only 3,000

board feet per acre cost only 119 man minutes per thousand, considerably less than clearcutting.

These rather surprising figures are explained by the fact that where selective cutting is employed we are generally removing only the largest trees which gives us the greatest handling efficiency during each step of the logging process.

SEED SOURCE IS RELIABLE

Selection management provides us with many advantages in obtaining reproduction. There is no difficulty with seed source. We are assured of reforestation with trees acclimated to the particular site. Collecting seeds in one area for reforestation in another is far more hazardous than most foresters realize. In general, naturally regenerated stands are less susceptible to disease than those artificially reproduced.

Foresters would do well to heed the warning of a recent report from the Southern Forest Experiment Station. One hundred forty species were tried in southern Arkansas and northern Louisiana, mainly pine and eucalyptus. The best growth was obtained in Slash, Pond and Virginia pine, but none were as large as native Loblolly after 9 to 12 years. This experiment strongly supports the well-known principle of silviculture that one is safest with natural regeneration, or at least with perpetuation of indigenous species.

SOIL IS PROTECTED

American foresters notoriously disregard the effects of logging practices upon soils. This is particularly true of the post war era in which logging has become highly mechanized and where much of the remaining timber being logged is on steep ground. The oversized and unwieldy equipment used by logging operators is totally unacceptable in the concept of excellent forestry. Logging should be conducted with light, small equipment, preferably rubber tired, in order to be maneuverable around trees left in selection forests and to function without disturbing the soil. All logging should be planned and supervised to prevent this damage, and no logging should be permitted where complete protection of the soil cannot be assured.

Clearcutting promotes erosion and compaction of the surface soil, particularly where mineral soil is exposed. Clearcutting allows organic matter to become dessicated, slowing down decay in dry climates such as characterize much of our western forests. Clearcutting exposes the forest floor to intense insulation and evaporation and, as a result, the normal soil life of fungi, bacteria, worms, microscopic plants and animals of all kinds are destroyed or at least greatly changed, with fauna and flora of open lands coming in. This is usually undesirable. Clearcutting invites invasion of vegetation that severely competes with forest tree seedlings. In the northwestern United States, clearcutting of forests and forest fires have increased floods from watersheds from both rain-snow melt floods and snow melt floods. Where stocking of the forests has recovered with time the flood peak discharges again decrease.

LANDSLIDES MINIMIZED

It is fair to conclude from published literature that there exists a definite cause and effect relationship between clearcutting and mass-soil movement. Forest cover affects deep seated stability of a slope in two ways, by modifying the hydrologic regime in soil mantle, and by mechanical reinforcement from the root system. The former is important only the first year, before invading vegetation takes hold. The root system is far more important, and gradual deterioration of tree roots leads to progressively greater slope instability.

SOIL FERTILITY MAINTAINED

Something should be said for maintaining the natural mixture of species that occurs in the forest. This, too, is best done through reliance upon natural reproduction. Some species make excessively heavy demands on soil nutrients when planted in pure stands. They may do well in youth but later slow up and deteriorate. The admixture of species that makes light demand on the soil and whose leaf litter decomposes readily into a mild, rich humus is often necessary. Furthermore, pure stands may fail to utilize the site completely, either because they are composed of an intolerant species and in consequence have thin, open crowns which presumably fail to utilize the sunlight completely, or because they are shallow rooted and utilize only part of the soil.

PRESERVES WATERSHED AND FISH HABITAT

Selection management with careful planning of roads and logging is of great importance in sustaining the quality and productivity of the soil for these many reasons. It tends to maintain soil porosity and its water absorption qualities, thus reducing erosion and flood damage. Care of the soil and maintaining a full canopy also protect the habitat for fish in streams by keeping the water clean and cold and by preserving spawning beds. Silt and slime, the products of erosion, are unsuitable for spawning. They inhibit the flow of water through gravel where fish eggs are spawned, thus shutting off the essential supply of oxygen.

PRESERVES NATURAL BEAUTY

Excellent forestry largely preserves the beauty of the natural forest. For most people such well-managed forests will quite adequately serve most of their wildland recreational needs. By maintaining the natural beauty of the forests we therefore take a good deal of pressure off wilderness. In contrast, present practices on the national forests, and to a greater extent on private forest lands, is creating an ever increasing demand for more wilderness.

If national parks and wilderness areas become the only places of natural beauty we have for outdoor experiences, people who do not care for wilderness *per se* will crowd in with those who do. This would not only increase the use of such places but would add to the clamor for roads and other nonwilderness development. Furthermore, if we should reach the sad state of having no large, old-growth timber except within our national parks, we would surely face a great clamor to log that, too. Indeed, the overture to this clamor is already being heard. We had a foretaste in the ridiculous arguments advanced in opposition to the Redwood National Park which will be all too familiar to the reader.

Excellent forestry costs nothing but restraint and offers the greatest gifts a forest can provide.

Mr. FOLEY. Thank you very much. We will leave the record open for a period of 2 weeks to accommodate any written presentations that the committee might receive in that time.

Are there any questions of Mr. Robinson?

If not, thank you very much.

The next witness will be Mr. Peter Twight, National Parks & Conservation Association, Washington, D.C.

STATEMENT OF PETER TWIGHT, ADMINISTRATIVE ASSISTANT FOR FORESTRY, NATIONAL PARKS & CONSERVATION ASSOCIATION, WASHINGTON, D.C.

Mr. TWIGHT. My name is Peter A. Twight, 1701 18th Street NW., Washington, D.C. 20009. I am administrative assistant for forestry at the National Parks & Conservation Association. I appreciate the invitation of this committee to testify at this hearing.

The National Parks & Conservation Association is the leading national conservation organization concerned primarily with the protection of the national park system, but also with other major environmental and conservation subjects such as wildlife and forestry.

The NPCA is an independent, private, nonprofit membership institution, educational and scientific in character, with over 50,000 members throughout the United States and abroad, all of whom receive the monthly National Parks & Conservation magazine: The Environmental Journal.

The NPCA urges careful consideration of two questions regarding clearcutting:

1. Is the available information being rationally applied to the public lands in the interests of all of the people of the United States by the agencies entrusted with those lands?

2. Is current information on clearcutting adequate to make administrative decisions in the public interest?

We do not believe either of these questions can be answered affirmatively, and therefore an independent study and further congressional oversight is required to assure that administration of the public lands is for the benefit of all the people.

We believe the use of forestry research to support clearcutting has been emotionally biased, that the cultural assumptions and presuppositions of foresters put timber production first in spite of stated multiple-use goals, and that the alleged scientific basis for the biological necessity of clearcutting is derived from an economically biased interpretation of research results.

It may seem strange for allegedly emotional conservationists to argue that foresters are not credible in some decisions because of their emotional biases. Foresters have long claimed to be scientific, objective, unbiased protagonists of reality who are caught in the ugly maelstrom of the emotionalism of people who oppose progress. Two recent studies indicate the all-too-human characteristics of foresters. The first, by Gordon Bultena and John Hendee, shows that government foresters in Washington and Oregon overwhelmingly identify with the goals and objectives of the Forest Industries, and identify little with recreationists.¹ This could have no influence on decisions, but it clearly indicates the likelihood of unconscious or conscious bias when evaluating or even proposing land management options.

A second study shows the history and development of a narrowly materialistic utilitarian orientation to forestry which has dominated the profession, and even until recently, all of the forestry schools. This study details the characteristics of this orientation through study of a conflict between the Forest Service and the National Park Service over Olympic Park.² Many say the Forest Service has outgrown those attitudes, and we are sure many men in the Service have done so; but we hear constantly reiterated the same themes as of yesteryear in defense of clearcutting: that the nation needs wood, that a timber shortage is around the corner, that if timber needs are satisfied then other uses will be served adequately, that the forest industry must be stabilized, that jobs must be maintained, and professionals should make resource use decisions. Some of these arguments are fallacious, and some may have merit.

The point is that there is a clear bias and lack of identification with the desires and needs of other segments of society. This bias colors many management decisions concerning the need and application of clearcutting. Utilitarianism, even the narrow materialistic version of Americans, has been at least partly responsible for our rapid national development and power; but we must broaden utility to include the esthetic and ethical if we are to sustain a permanent civilization.

We believe that despite all talk of multiple-use, the decision to manage forests on an even-aged basis arises from the assumptions of timber primacy and narrow utilitarian efficiency. Even-aged management is often the most financially efficient method of forest management. It has economies of scale through use of big equipment, regula-

¹ Bultena, Gordon L., and Hendee, John C., 1972. "Foresters' Views of Interest Group Positions on Forest Policy," *Journal of Forestry*, 70(6): 337-342.

² Twight, Ben W., 1971. "The Tenacity of Value Commitment: The Forest Service and the Olympic National Park," unpublished Ph. D. dissertation, University of Washington, College of Forest Resources, Seattle.

tion of timber flow by area, and it requires less skill and supervision in its application. We do not believe clearcutting as a part of even-aged management is socially efficient. We believe that clearcutting is uneconomic in the broad sense of the term, and that the commitment to even-aged management of public forests is not based on an overriding national need for timber. An unbiased study of clearcutting would show clearly whether or not timber primacy is economic or merely profitable.

The claim that clearcutting can be multiple use and not exclusive use is easily shown to be fallacious. Certainly, no one would argue that clearcutting favors recreation or esthetics. Since clearcutting is a part of area regulation and management, the openings are larger than are required to maximize edge effect. Therefore, clearcutting is not done in order to favor wildlife. Wildlife would be more favored by small openings of one-half acre to 1½-acre clearings characteristic of uneven-aged management of shade intolerant tree species. Water quantities are temporarily increased by clearcutting whole watersheds, though water quality suffers. However, a total forest should never be clearcut at one time; revegetation soon reduces water yields; and we know of no studies which show that the water yield from 50 1-acre clearings differs significantly from the water yield of one 50-acre clearing. The value of small percentage increases in water yield claimed to come from clearcutting forests has not been demonstrated to exceed gains easily obtainable from more efficient use of water, such as from sprinkler irrigation instead of ditch irrigation, or raising the price of water, or by reducing water pollution.

We believe that research does not support the conclusion that clearcutting, as done by the Forest Service, is necessary in order to grow intolerant tree species. The Senate Interior Public Lands Subcommittee Report, "Clearcutting on Federal Timberlands," states the Forest Service contention that research demonstrates the need to clearcut certain important tree species if they are to be reforested successfully. Examination of that testimony indicates some confusion. The testimony by Dr. Warren T. Doolittle, referred to in the report, points out well-known difficulties with the selection system, but completely ignores group selection. He goes on to say that clearcutting openings as small as one-quarter acre provides for desirable regeneration. Further, he says, the decision on the size of clearcuts is dependent on other considerations than regeneration.³ Dr. Doolittle's statements, in the context of Forest Service timber management policies, are completely misleading. Clearcutting by the Forest Service is inextricably a part of even-aged management which utilizes area regulation. Clearcuts must be 5-10 acres or more to be easily mapped and maintained as a management unit. Cutting openings of one-quarter to 1 acre is not clearcutting as practiced by the Forest Service, or anyone else. Such cutting is group selection as advocated by Dr. Leon S. Minckler⁴ and others who oppose clearcutting.

Openings ¼-1 acre in size must be managed on an uneven-aged basis. Dr. Doolittle's testimony does not support clearcutting as practiced by the Forest Service. The confusion between research results and management practice will be further discussed by exami-

³ Doolittle, Warren T., 1971, statement before the Subcommittee on Public Lands, Committee on Interior and Insular Affairs, U.S. Senate, on the management of public lands, May 7, 1971.

⁴ Minckler, Leon S., 1972, "Hardwood Silviculture for Modern Needs," *Journal of Forestry*, 70(1) : 10-17.

nation of a basic hardwood silviculture handbook and one of the major western "clearcut" species. We believe the research has been interpreted and unconsciously distorted either to fit established policies or to fit the "forestry" value system.

Agriculture Handbook 355, issued by the U.S. Forest Service entitled "Even-aged Silviculture for Central Upland Hardwoods,"⁵ will show Forest Service thought on even-aged management. The objective for the silviculture outlined is "to grow full yields of the highest value products the site can produce in a relatively short time." This clearly is not multiple-use; but even within its stated criterion, it has serious errors in logic and interpretation of supporting research.

Three statements are made to show the need for even-aged management and its associated clearcutting. The first of these states, "Upland central hardwoods should be grown in even-aged stands (Roach 1962, 1963)." These refer to papers by Mr. Benjamin Roach which outline "practical silviculture" whose purpose is to grow timber products to sell. Individual tree selection, he says won't work because intolerant species (including oaks) only develop in even-aged stands. Openings may be of such size as to be called group-selection, he says, but group-selection regulates the amount cut by volume only and makes it difficult to recognize overcutting. Group selection requires a high degree of technical competence and foresight, says Mr. Roach, and then speaks of the simplicity and efficiency of even-aged management.⁶ None of his statements shows any biological reason for even-aged management and its associated clearcutting. The reasons are those of cost and competence.

A second statement is that "upland hardwoods cannot be reproduced with satisfactory composition or growth by individual tree selection or by group selection where groups consist of only a few trees (Minckler, *et al* 1961). Upland hardwoods are best suited to even-aged silviculture." Dr. Leon Minckler has written the Forest Service 8 pages criticizing Handbook 355. In that letter he says the foregoing citation is wrong and misleading as a definition of group-selection, and that the Handbook reference, Minckler, *et al*, had nothing to do with group selection.

Even-aged silviculture means any silviculture which develops even-aged stands, and the stands may be one-fifth acre or 100 acres. A one-fifth acre to one-half acre clearing is created by group selection, whereas 100 acres is a clearcut. We assume a clearcut, in its usual usage, to be of sufficient size to be used for area regulation with even-aged management, which is 5 to 10 acres or more. Smaller sized clearings may be made, but usually must be managed as uneven-aged using volume regulation with all the associated need for competence. Clearly, nothing in the second statement quoted above shows any necessity to clearcut, but does show some questionable statements in Handbook 355.

The third statement is, "Clearcuttings should be used for regeneration (Roach 1963, Sander and Clark)." We have already discussed the conclusions of Mr. Roach. Sander and Clark say that clearcutting is "the most efficient method for timber production." "Silviculturally, there is little difference between group selection cutting and clear

⁵ Roach, Benjamin A. and Gingrich, Samuel F., 1968. "Even-aged Silviculture for Upland Central Hardwoods," Agricultural Handbook No. 355, Forest Service, USDA.

⁶ Roach, B., 1962. "Practical Silviculture for Central Hardwood Stands," *Southern Lumberman*, October 1962.

cutting." The shade intolerant yellow poplar are reforested in openings of one-tenth to one-fourth acre; but "for best growth of the reproduction, the minimum sized circular opening should not be less than one-half acre; 1 acre is probably more ideal."⁷ Since even-aged management rarely uses clearcuts as small as 5 acres, Sander and Clark do not necessarily support clearcutting as Handbook 355 implies. They could as easily support uneven-aged management and group selection. Clark and Watt⁸ again mention one-half acre circular clearings as the best minimum for growth when using group selection. Minckler and Woerheide⁹ found plenty of high quality regeneration of oaks and yellow poplar in openings 60-80 feet in diameter, and better results in openings up to one-third acre (120 ft. sq.).

The need for an opening that gives some overhead light is biologically necessary to grow shade intolerant species. The decision to make the opening larger for even-aged management should be argued on some other basis than biology. Apparently, the question is one of financial efficiency and management simplicity. The skill and time required to adequately manage using uneven-aged techniques costs money, and the need to have such financial efficiency we feel has not been established. Two studies, in fact, indicate that uneven-aged hardwood management may yield more money. A 1970 publication by Goodspeed and Bell¹⁰ shows that felling and skidding costs for selection cutting in mixed hardwoods were only \$1 to \$2 per thousand board feet higher than for even-aged cutting, and although returns per thousand board feet weren't given by cutting method, it seems clear that selection cutting would yield a significantly higher value per thousand board feet because fewer and larger trees are cut. Another study by the Forest Service showed slightly higher financial returns from the use of selection cutting in New England hardwoods.¹¹

From the foregoing, we see that silvicultural research does not show clearcutting is necessary, that silvicultural research has been distorted to support management reasons for clearcutting, and that the management reasons given for clearcutting in hardwoods are also in some doubt. Clearly, further unbiased study is needed to ascertain the public good in the management of eastern hardwoods.

A famous western species for which the biological necessity of clearcutting is claimed is Douglas-fir. Several wise and prominent foresters have described the debacle of selection cutting in the 1930's which "crashlanded." We do not believe the results support the conclusion that *all* selection cutting in Douglas-fir will end in disaster.

The primary failures of selection cutting in the 1930's occurred in the hemlock/Douglas-fir zone which is found at lower elevations from central Oregon through Washington. Single tree selection cuts removing 25 percent of the volume or more opened the forest so much that extensive losses to blowdown, insects, and rot occurred. *But* where less than 25 percent of the volume was removed, losses were very

⁷ Sander, Evan L., and Clark, F. Bryan, 1971, "Reproduction of Upland Hardwood Forests in the Central States," Agricultural Handbook No. 405, U.S. Forest Service.

⁸ Clark, F. Bryan, and Watt, Richard F., 1971, "Silvicultural Methods for Regenerating Oaks."

⁹ Minckler, Leon S., and Woerhide, John D., 1965, "Reproduction of Hardwoods 10 Years After Cutting as Affected by Site and Opening Size," *Journal of Forestry* 63(2) : 103-107.

¹⁰ Goodspeed, Allen W., and Bell, John F., 1970, "The Practice of Forestry on the Island Creek Experimental Forest," Bull. 587, West Virginia Agricultural Experiment Station, College of Agriculture and Forestry, Morgantown, W. Va.

¹¹ Filip, Stanley M., 1967, "Harvesting Costs and Returns Under Four Cutting Methods in Beech-Birch-Maple Stands in New England," U.S. Forest Service Research Paper NE-87.

small.¹² Isaac in 1943 reports that Douglas-fir forests over 500-600 years of age often are uneven-aged in groups because small openings occur as the decadent forest breaks up, and these are filled with new young trees. These forests which break up by small groups apparently do not blow-down, and may well portray the results that would be obtained if group selection were utilized.¹³ Intensive forestry in such stands would control the species composition to insure a suitable crop.

Gratkowski reports on a study in which blow-down occurred in the hemlock/Douglas-fir zone where sitka spruce is a prominent member. Such blow-down occurred in openings as small as one-half acre and is not correlated with opening size.¹⁴ However, a forest with a high percentage of shallow-rooted sitka spruce would be more vulnerable to blow-down than most of the forest in the hemlock/Douglas-fir zone. In the study done by Gratkowski there was no correlation between clear-cut size and blow-down but none of these openings were under 20 acres and therefore are not relevant to the group selection method we believe to be a viable alternative to clearcutting. Except in areas where wind-throw is a serious threat, there seems to be no natural reason to clear-cut, and much data favors some form of partial cutting.

It has often been said that clearcutting is a necessary duplication of large wildfires of the past. However, Isaac found that Douglas-fir regeneration is very sensitive to soil surface temperatures, and that a dark charcoal soil surface left by fire caused 100-percent mortality of seedlings in the open.¹⁵ Not until brush or weeds supply shade, or unless partial cutting leaves shade will Douglas-fir regenerate. Franklin found that narrow strip cuts which were partially shaded had good seedling survival.¹⁶

It seems clear that the data and arguments supporting the biological necessity of clearcutting are far from conclusive, and actually indicate partial cutting such as shelterwood or group selection. Management arguments favoring clearcutting in the west have much in their favor, but all presuppose a need for wood and for financial efficiency which has yet to be demonstrated.

For the reasons given above, we believe that in the East and West, the policy of even-aged management using clearcutting has been supported more by the assumptions and value judgments of men identifying with and supporting a narrowly utilitarian point of view than by the objectively applied results of research. We believe an independent and balanced study would clarify this murky question of clearcutting.

The adequacy of information available for decision on clearcutting policy can be tested by asking about the benefits and costs of clearcutting; sufficient information should make a decision on clearcutting policy apparent. Certainly one of the attributes of clearcutting is that timber products can be supplied in greater short-run quantities for a lower dollar cost. This has been indicated by Professor Bethel's

¹² Isaac, Leo A., 1956, "Place of Partial Cutting in Old-growth Stands of the Douglas-fir Region," Pacific Northwest Experimental Station Research Paper 16, U.S. Forest Service.

¹³ Isaac, Leo A., 1943, "Reproductive Habits of Douglas-fir," Charles Lathrop Pack Foundation, Washington, D.C.

¹⁴ Gratkowski, H. J., 1956, "Windthrow Around Staggered Settings in Old-growth Douglas-fir," *Forest Science*, 2(1): 60-74.

¹⁵ Isaac, Leo A., 1938, "Factors Affecting Establishment of Douglas-fir Seedlings," U.S. Department of Agriculture, Circular 486, 45 pp.

¹⁶ Franklin, Jerry F., 1963, "Natural Regeneration of Douglas-fir and Associated Species Using Modified Clearcutting Systems in the Oregon Cascades," U.S. Forest Service, Pacific Northwest Experiment Station Research Paper 3.

report to the Council of Environmental Quality.¹⁷ Professor Bethel shows that production would drop 12 to 45 percent in the short run if clearcutting were to be stopped. Whether this attribute of clearcutting is a benefit is not clear, hence, the need for study.

There are three areas of information lacking for a decision on the need for timber. The first concerns the projected needs for timber. Several respected economists, Dr. Thomas R. Waggener,¹⁸ Dr. Henry Vaux,¹⁹ Dr. J. A. Zirruska and Vaux,²⁰ questioned the adequacy of any projected timber need which does not include price in its supply and demand calculations. The present supply and demand projections by the Forest Service do not adequately consider changes in price. After all, it is the pricing system which we are depending on to safeguard us from shortages in all other resources.²¹ Lack of consideration of price means timber supply projections will not be valid if prices increase due to environmental safeguards, or if higher prices encourage the use of wood substitutes such as steel, aluminum, plastics, fiberglass, and concrete.

The second major information lack is related to the first. Despite the National Environmental Policy Act requirement of an environmental impact statement on major Federal actions, we still have no report on the environmental impact of the current allowable cut. Before a rational decision can be made concerning our national need for timber, we need to know the environmental impact of cutting the full "allowable cut," which depends upon clearcutting, and the environmental impact of using substitute materials. The maximum use of timber could be of great environmental value since solar energy is used to manufacture the cellulose, and the energy efficiency and renewability of forests may outweigh the negative impacts of conversion of forests to lumber and other products. On the other hand, the economies of scale possible in the manufacture of steel, aluminum, plastic, fiberglass and concrete could reduce the environmental impact of timber substitutes so that timber is not needed in the quantities projected, and clearcutting would be unnecessary.

A third area of information must be expanded before the need for shortrun timber supplies from clearcutting is evident. Herbert Fleisher of the Forest Service Wood Products Lab reported that within 5 years the present utility of the current timber supply could be doubled through use of technology.²² This, in effect, would double the timber supply without cutting any more volume than at present, or we could reduce the cut by 50% and meet the current level of use of timber. Before we can decide if the greater shortrun timber supply and lower dollar cost is a benefit, we should know if the

¹⁷ Bethel, James S., 1972, "Clearcutting as a Forestry Practice With Special Reference to Its Use by the U.S. Forest Service and the Bureau of Land Management in Alaska, Washington, and Oregon." In "An Analysis of Forestry Issues in the First Session of the 92d Congress" for the Committee on Interior and Insular Affairs, U.S. Senate, April 1972, pp. 43-49.

¹⁸ Waggener, Thomas R., 1971, "One Forest Economist's Viewpoint," in *The Future, Forest Pile, and the 1970 National Timber Review* by Brian R. Wall, Society of American Foresters, Portland, Oreg.

¹⁹ Vaux, Henry J., 1970, classnotes from forest policy seminar, "The Theory of Production Goals," an unpublished summary, Forestry 215, University of California School of Forestry and Conservation.

²⁰ Zirruska, J. A., and Vaux, H. J., 1952, "Forest Production Goals: A Critical Analysis," *Land Economics* 28(4): 318-327.

²¹ Barnett, Harold J., and Morse, Chandler, 1963, "Scarcity and Growth," Johns Hopkins Press, Baltimore.

²² Fleisher, Herbert, 1972, "The Other Half of the Tree," unpublished speech to the Washington section of the Society of American Foresters, March 1972.

cost of this technological alternative timber supply is greater or less than the nonmarket costs of clearcutting.

The costs of clearcutting are far from clear. While studies by the Forest Service do indicate that there need not be any long-term damage to the forest ecosystems,²³ the NPCA does not believe these studies to be sufficient or conclusive. It is apparently not yet possible to set meaningful standards of minimum erosion, nutrient loss, stream sediment levels or stream nutrient levels.²⁴ Esthetic costs are far more difficult to evaluate, but are significant.

Another cost of clearcutting, the effects of which may be seen in the mere existence of this hearing, is the ethical cost. Ethics has to do with the rightness or wrongness of behavior. Our behavior toward our environment has been based on the implicit assumption that man is master of nature, and he can do what he wishes to nature. The violence to nature we have accepted for so long is based on that ethical assumption. If clearcutting appears to be an ill-considered, avoidable violence, does it not continue to teach the ethics at the root of our environmental problems? Will our society support the necessary costs of safeguarding complex, little understood ecosystems when it is continually confronted with apparently or actually conflicting ethics? An even broader consideration of the whole web of the human ecosystem must question a narrowly materialistic utilitarian forest policy when studies show that materialistic men believe in violence for social control.²⁵

We can only conclude that need for timber has not been adequately shown to justify clearcutting, the unknown environmental costs and benefits of cutting timber at a rate requiring clearcutting has not been compared to use of substitutes, the effects of technologically doubling the timber supply are unknown, too little is yet known to set meaningful standards for environmental impacts of clearcutting, evaluation of esthetic costs is difficult and the ethical costs of clearcutting have hardly been considered. Certainly, these are sufficient reasons for speedy passage of this legislation.

Thank you for the invitation to present this testimony. I will be happy to answer any questions you may have.

Mr. FOLEY. Thank you, Mr. Twight.

Any questions?

Mr. KYL. The thing that bothers me is that it seems to say again we want to have an unbiased study to prove that we are right and somebody else is wrong. I don't know how any study that could be made, could be made on that basis and come out with any kind of a logical conclusion.

Sir, are you in favor of setting aside some massive acreage of our national forest system for wilderness?

Mr. TWIGHT. I do appreciate wildernesses and I think that the demands on wilderness indicate a need for more wilderness.

Mr. KYL. You do think we should set aside acreages for wilderness?

Mr. TWIGHT. Yes, sir.

²³ U.S. Forest Service, 1971, "Effect of Forest-Management Practices on Nutrient Losses," prepared for hearings of Subcommittee on Public Lands, Committee on Interior and Insular Affairs, U.S. Senate.

²⁴ Loomis, R. S., et al., "Public Policy for California Lands."

²⁵ Kahn, Robert L., 1972, "Who Buys Bloodshed and Why?" *Psychology Today*, June, pp. 47, 48, 82-84.

Mr. KYL. Would you want to set aside all the forest areas for that purpose?

Mr. TWIGHT. Certainly not.

Mr. KYL. Do you think we should have some areas set aside where the dominant use would be the production of timber?

Mr. TWIGHT. I think we already have—

Mr. KYL. Do you think we should have this as a policy?

Mr. TWIGHT. I have very mixed feelings about it. On the one hand I have enough background and training in forestry that I can see where there is real opportunity to increase the amount of timber produced per acre if such a policy were followed. On the other hand, on public forests, it seems to me, well, I feel reluctant to say we should emphasize something like the dominant use policy where areas would be committed exclusively to timber.

Mr. KYL. It is all right to set aside some for the exclusive use of wilderness?

Mr. TWIGHT. Well, in terms of multiple use, the five uses Forest Service lists, if you include other uses, wilderness use includes high-quality water, recreation, hunting, and fishing. I recognize there is some—

Mr. KYL. You have some background in forestry. I assume that you have considerable. You speak here about how we can double our production through the use of technology. Are you familiar with what is being done on plans in the way of increasing production?

Mr. TWIGHT. Yes.

Mr. KYL. Through specialized trees, immediate clearing slash, through fertilization and a number of other factors?

Mr. TWIGHT. Yes, sir.

Mr. KYL. You recognize that most of that again has been on areas which are clearcut.

Mr. TWIGHT. That is true.

Mr. KYL. In other words, here you are advocating doubling the production by using the technology available and the technology available in those cases normally involves clearcut and that is wrong. We can not argue for both sides of the proposition at once, can we?

Mr. TWIGHT. That, I think, speaks to the dilemma that I feel about the dominant use.

Mr. KYL. I wish you would express a little more here in the statement what you now call a dilemma. I have tried to study this thing for a number of years and I have studied it very intensely for the last dozen years. I am not positive about all things. We can do a lot of things in the lab that don't happen when we put the product to work in nature itself in the big laboratory.

For each study that I cite on one side of this situation, I can cite another study which proves just the opposite. Therefore, as I started out this morning, I wonder again—don't we know enough now about nutrients, about soil erosion, about trees, about shade canopy, about all of these things, about the necessity to grouse for wildlife and the necessity of down cover for wildlife, all—don't we know enough to start managing forests today on a multidisciplinary basis which

protects the interests of all of the citizens and all the aspects of the forest?

Mr. TWIGHT. I believe that we have enough basic research to decide on this sort of thing. The thing that I am concerned about is that it seems very clear to me that research is not being rationally used. I think it comes because of—from the kind of bias of the image of the world that foresters have. Without breaking the kind of internal circular logic that has developed in forestry since 1898, I don't see any way to get outside of that.

Mr. KYL. If we set up a good commission of 17 members and they study for 18 months and report to the President of the United States and the Congress of the United States that clearcutting in plots up to 35 acres in a multiple disciplinary approach is not only a viable method but it is an economical method and protects the other ecological and environmental values, would you then accept that report or would you say we need some more hearings or another study because we don't agree with it?

Mr. TWIGHT. I am sure that I would accept it if the internal logic was sound.

Mr. KYL. You see that we are going to depend on the internal logic of 17 people here. Some of them are from the wood products industry and some from Congress and some come from areas where they grow timber and some where they don't. I don't have any timber in my district. I suppose that I have some people that think I waste my time working on forestry matters, trying to get reforestation, because we don't grow trees in my district.

I happen to think this is an important resource for all people. I also think it is not as dangerous environmentally to harvest timber in the best manner possible, as it is to produce the polychlorinated phenols and use all the energy we have in short supply in manufacturing many substitutes.

Mr. TWIGHT. That is my bias, too. But I don't think there are any studies which show really what the environmental impacts are relative to all the various materials supplied. That would be one area where productive studies should be done.

Mr. KYL. We have some that go back now more than 200 years in Japan, where they followed even-age management. I don't know how long we have to study these things before we get down to applying what we know on the ground so that we can satisfy all of the criteria that we included in the Multiple-Use-Sustained-Yield Watershed Act. We protect the environment, ecology. I think the time to do that is right now instead of again postponing some decision for 18 months when I am just as sure as I am sitting here that there will be no more acceptance of what this commission determines 18 months from now than there is on anything we have at the present time.

That is all, Mr. Chairman.

Mr. FOLEY. Thank you very much, Mr. Twight. We appreciate your comments. I agree with what I believe Mr. Kyl is saying. It is very difficult for Congress to establish any kind of commission, even with categorized classifications of participation, without the eventual product becoming a reflection of the personalities of the members of the commission. In the case of congressional representatives, it is predicted that if a commission of this kind is set up there will be certain mem-

bers of Congress—those who identify themselves as environmentalists—those who identify themselves as concerned about industry operations perhaps in parts of the country where lumber industries are active—who will seek membership. The membership selection process is vital to the success of a commission. Yet attempting to gain a varied and representative membership may produce confusion. If you have a rather contradictory amalgam of personalities who make up a commission, the results are sometimes not in tune with the resolution establishing the commission but instead are representative of the existing conflicts of opinion within the commission.

I must add, too, that Members of Congress have a very difficult time participating actively in these commissions without some very severe strains.

Mr. Kyl, by the way, I think is one of the most attentive of commission members and spent many long days and months with the President's Land Law Review Commission, but it is very difficult to give the time and attention to commission work which one would like to give.

Very often Members of Congress have staff members substituting for them at commission meetings. Typically, when department heads are made members of Presidential commissions and other commissions someone else usually sits for them. Maybe we ought to have a commission to study a commission and advise how commissions can be effectively utilized as an instrument of public policy.

I have a feeling we don't do that as well as the British do with the Royal Commission technique. Their commissions traditionally are known for their objectivity and judicial character, which is historical and important in the formulation of policy. Our commissions here are rather varied and spotty in their performance. They often differ in their results and in their impact on public policy. One of the problems with our commissions is that precedents have been established whereby the published findings and deliberations has resulted in its call for particular response by Congress or the Executive. Some of them only gather dust on the shelves.

Those remarks are directed to you as well as to the record. We have to decide first of all whether this is an area where we should be establishing a commission; and secondly, how do we go about framing it.

I want to say to Mr. Robinson, as I meant to before he left, I share some of your views that clearcutting is only one aspect of the series of related management and departmental problems. Any commission that deals with this problem should have a little wider scope than just the very narrow subject of clearcutting, or patch cutting, as it is referred to.

Our last witness is Mr. Ernest Dickerman, director of field services for the Wilderness Society, Washington, D.C.

Mr. Dickerman, as I have said many times as a former trial lawyer, many of my colleagues would not have given up the presumption of innocence unless they had the final argument.

STATEMENT OF ERNEST DICKERMAN, DIRECTOR OF FIELD SERVICES, WILDERNESS SOCIETY, WASHINGTON, D.C.

Mr. DICKERMAN. My name is Ernest M. Dickerman, director of field services, eastern region, the Wilderness Society. The Wilderness

Society is a national conservation organization of some 75,000 members whose primary interest is the preservation and beneficial use of the wilderness resources of the Nation. The wise use of our public forest lands is an integral part of that interest. Accordingly we very much appreciate the invitation offered by the Subcommittee on Forests to testify with respect to H.R. 14354, a bill to establish a commission to investigate and study the practice of clearcutting of timber resources of the United States on Federal lands.

The Wilderness Society has watched with mounting concern the increasing dominance of logging in determining administrative policy and practice on federally owned forest lands. The practices of the U.S. Forest Service have been the chief target of citizens' criticism, particularly as they have culminated in the indiscriminate clearcutting schedules of the Service. We welcome the proposal embodied in H.R. 14354 which, as we understand the intent and purpose of this bill, will result in a detailed study of clearcutting on the national forests as well as on other federally owned lands.

We would hope that the commission proposed herein, by virtue of the diligence with which it pursues its subject and the clarity with which it might report its findings, would achieve what other investigating bodies, public and private, have not yet succeeded in doing, that is reduce clearcutting to the limited, special place as a forest management tool which the theory of clearcutting assigns to it.

The theory of clearcutting places many qualifications and restrictions as to just where and how clearcutting shall be utilized. These qualifications pertain to such factors as size, degree of slope, soil conditions, rainfall, prompt regeneration, and species. It is because the Forest Service has in too many cases chosen to ignore these limiting qualifications that the widespread criticism of clearcutting has developed all across the country. There is a legitimate place for clearcutting as it has been worked out through scientific study and experimentation has a sound base.

What is bad is the actual practice of the Forest Service as it is applied indiscriminately and without professional regard to the limits carefully built into the theory.

H.R. 14354 sets out that it shall be the duty of the commission to conduct a full and complete study and investigation of the practice of clearcutting of timber on Federal lands. We certainly endorse that statement. We would hope and expect, however, that the commission would clearly recognize that clearcutting is closely interwoven with forest management generally. For the commission's report to be useful, it is our view that the commission's studies must show the relationship of clearcutting to multiple use and sustained yield on the forests. It is precisely because clearcutting so often denies the principles of sustained yield and multiple use that the public outcry against this management tool has been vigorous and persistent. To increasing numbers of citizens the values of our federally owned forests for water conservation, wildlife habitat, scenery, recreation, scientific study of the ecological processes, and wilderness have become far more important than the maximum number of board feet of lumber which might be produced. The present gross imbalance must be corrected.

We have the National Environmental Policy Act and its section 102 requiring an environmental impact statement for any Federal action having a major effect upon the environment. Logging definitely has a

major effect on the area involved, whether it is done by selective, clearcut or other method. We urge that the commission in consequence of the passage of H.R. 14354 give careful consideration to the need of requiring an environmental impact statement in conjunction with any proposed timber sale on Federal lands.

In our view such statements should already be filed but, since they do not seem to be, the proposed commission can perform a fruitful service by calling attention to the oversight and recommending its correction. Properly conducted logging operations will not be interfered with by compliance with the National Environmental Policy Act. On the other hand, an environmental impact statement issued with respect to a proposed clearcutting timber contract which did not have written into it the limitations and safeguards contained in the theory of clearcutting would be a readily visible signal to all concerned that unwarranted damage to the forest was about to occur.

The Congress and the people have sought through such legislation as the Multiple Use and Sustained Yield Act to set guidelines for the Forest Service which would assure that all of the several recognized benefits from our national forests would indeed be enjoyed by the Nation. Experience has unfortunately shown that such existing legislation is too indefinite in its expression to accomplish the objectives intended.

We express the hope that consideration of this bill by the Committee on Agriculture is a positive indication that the Congress intends to improve this situation and to write new legislation which will be sufficiently clear and firm that logging ceases to dominate the management of our federally owned forests. We need complete land management on the public forest lands—not simply timber management for purposes of logging board feet of lumber.

Thank you, Mr. Chairman.

Mr. FOLEY. Thank you, Mr. Dickerman.

Are there any questions of Mr. Dickerman?

Mr. KYL. Just one.

If you followed what I referred to many times here today, inadequate as the multidisciplinary approach is to certain watersheds, and we had our model constructed with the size of the cut contemplated in the area of cut and regeneration procedures and all that sort of thing, don't you think that that would be a sufficient environmental impact statement? In other words, instead of just having a statement as to what might happen, you have an actual plan developed which takes into consideration all the factors, and wouldn't that be a better statement of impact than just an impact statement on a single activity within a watershed?

Mr. DICKERMAN. I think where we get criticism of forest land management nowadays is because the individual practices on the particular forest and the particular single cuts and so on are in so many cases held by many individuals to be contrary to the intent and purpose of existing legislation. If there were a feeling in the public generally that multiple use and sustained yield were in fact being followed as many people think is the intent, then what you are suggesting, I think, might well be adequate.

Among many people the feeling is that we get too many timber sales where this concept of the multiple use and sustained yield gets pushed into the background and we don't get those benefits. So the individual

impact statement is to call attention to just what is in fact going on.

Mr. KYL. I am not talking about something being adequate. What I am suggesting is an actual management program would be far more complete and valuable than simply an environmental impact statement on a single segment of a management area.

Mr. DICKERMAN. It might well be that you have a management plan or equivalent to an impact statement, or a district, or that that might serve the same purpose. Is that the point you are getting at?

Mr. KYL. I want something more than an environmental impact statement that can be generated far too often by a lack of understanding as well as anything else. You talk about the fact that people get upset when they think the law is being violated. I think about the person, too; very sophisticated, intelligent, aware, and committed person writes me a letter and says, "We returned from a national forest and they are still cutting trees." They think that this National Forest Act was somehow to set aside the national forests as a park or wilderness area. The fact that they are cutting a tree is just unconscionable. We have got to have a lot more education and the kind of talking is not one directed at that but starting as it goes out in all directions.

Thank you very much.

Mr. FOLEY. Thank you very much, Mr. Dickerman. We appreciate your appearance. I do have listed Dr. Donald Dahlsten as a witness. Is he in the room?

I am advised he was not able to come.

As I said a little while ago, the record will be kept open for 10 days for any one wishing to submit additional statements or comments.

(The following statements and letters were subsequently received by the subcommittee:)

STATEMENT OF HON. JOHN H. BUCHANAN, JR., A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF ALABAMA

Mr. Chairman, members of the Subcommittee, I appreciate the opportunity to present my views to the Subcommittee on the policy of clear-cutting as it pertains to federal property.

As a co-sponsor of H.R. 14888, which would establish an Interdisciplinary Clear cutting Practice Study Commission, I feel that the practice of clear cutting should be regulated with guidelines established by the Congress.

Unbridled clear cutting has particularly frightening portents for the State of Alabama where we have one of the nation's finest supplies of flora and fauna in our woodlands, including some 2,500 recognized forms of trees and other plant life.

We are fortunate to have a rare supply of hardwoods which, when gone, are irreplaceable. Arguments to the contrary notwithstanding, these hardwoods cannot be replaced with pines.

Unfortunately, clear cutting does not cut out a few select trees and leave the remaining underbrush. Even when pine trees are planted in their place, the original shrubbery is gone, leaving the land to the ravages of wind, water and erosion until the new trees can take hold.

In Alabama there are more than 372 species of bird, including many woodland species which require hardwoods to survive. There are an estimated 250 species of fish in our freshwater streams, but they need fresh water to survive, not water which is replete with the topsoil of the land caused by erosion due to clear cutting.

This situation is not unique to Alabama and this is why we need a national policy. Too often in the past, Forest Service officials have tended to side with lumber interests to the detriment of our forests and the animal life there. In many areas, it is too late to reclaim this lost heritage.

Private lumbering firms must, of course, pay the government for the timber on federal land which they use. Since the Forest Service is, therefore, operating a profitable business, it is even more important that we in the Congress establish

guidelines to ensure that our national forests do not become solely a business venture and are protected for the best use and for all of the people in future generations.

There are still areas in this nation which contain woodlands in much of their natural state. They must be given a chance to survive.

There is also, of course, the need for adequate supplies of wood to meet the ever increasing needs for housing and products made of wood.

H.R. 14888 would at least provide the guidance for clear cutting in the future, if such a practice is to be used at all on federal lands. While I personally would recommend that it not be, such a study would investigate all aspects of the problem to determine what the future should hold for our forests.

We have reached a point in our history where our national forests are being used more and more by our citizenry. We must manage these lands to ensure that there will be adequate forest lands for the ever increasing number of people who seek to use them.

Under this legislation, the Commission would be required to submit its report within 18 months of enactment of the bill. Such a report would include recommendations for the future.

In Alabama we have a woodland area which we are struggling desperately to protect. Such protection requires legislation in our situation and in similar situations across the country. Legislation takes time, however, and without a national policy governing clear cutting practices on federal lands, we have no guarantee that the forests will still be there to protect when legislation is finally passed to protect them.

The changes left in our land by clear-cutting are too irreversible to permit this practice to continue without clear knowledge of the effect it is having.

While I personally would strongly favor the cessation of clear cutting on federal lands, H.R. 14888 offers an approach to the situation which everyone, in my judgment, can live with. It sets the machinery in motion to determine what the policy should be.

I cannot believe that even those who wish to use our national forests for lumbering would wish to jeopardize our precious woodland heritage without at least having a clear idea of what the future can expect to hold for our forests and the wildlife which depend on them.

Mr. Chairman, I would like to include with my testimony statements by Mrs. Lindsay Smith, president of the Alabama Conservancy and Mrs. Robert Burks, vice president of the Conservancy and chairman of the Wilderness Committee. These statements, in my judgment, offer additional reasons for the very great need for a study of this situation.

Thank you.

The statements of Mrs. Smith and Mrs. Burks follow:

STATEMENT OF MRS. LINDSAY C. SMITH, PRESIDENT, ALABAMA CONSERVANCY

On public lands, I would like to see clear-cutting abolished or at least restricted to a maximum of 25 acres. The woodlands of our National Forests have too much value as watershed, species refuges, recreation areas and soil banks to be squandered in pine plantations for pure cellulose production.

The pine is a valuable species for reforesting denuded land areas such as strip mined lands, worn-out agricultural fields, etc. Such acreage could and should be planted to pine for everyone's benefit. But to destroy the pure and mixed hardwood forest of our National Forests to plant pine just doesn't make sense.

Ralph Allen of the Alabama Department of Conservation stated at the hearings on the proposed Sipsey Wilderness in April 1971 that more cellulose had been burned and poisoned in clear-cutting of National Forest land in Alabama than could be grown on these same acres in 20 years.

My objections to clear-cutting on private lands in Alabama is aimed largely at the size of the cuts and the completeness of them. All over Alabama you find clear-cuts of one mile by two miles or larger where the cutting is done through the streams, up and down slopes with everything destroyed. The resultant erosion is extensive, the loss of plant and animal life is immeasurable, loss of soil fertility and water holding capacity are great. It is interesting to me that some private paper companies in Alabama are modifying their clear-cut practices—not for altruistic reasons but because even they have found them to be poor practices economically.

These companies are now leaving a narrow strip of trees along streams not cutting northern slopes and planting on a 10-foot grid rather than a 6-foot one. I personally think that even the paper and timber companies will eventually find that clear-cutting is too destructive a land practice. But, by then, we may have

frittered away so much soil fertility, spoiled so many streams and destroyed so many plant and animal species that the damage is irreparable.

Clear cutting can be practiced in South Alabama on the Coastal Plain with less damage than in the more hilly northern half of the state. Where the land is flatter and pine is the more natural forest cover, cuts of possibly up to 200 acres shouldn't be too destructive if: cuts are spaced far enough apart, buffer zones of hardwood are left and maintained along all streams, and extreme care is taken to minimize soil erosion.

In North Alabama, clear-cuts should never be very large.

I would like to commend to you pages 8 and 9 of "Clear-cutting on Public Timber Lands," Report by subcommittee on Public Lands to the Committee on Interior and Insular Affairs of the U.S. Senate.

AN ENVIRONMENTAL CRITIQUE OF CLEAR-CUTTING WITH EMPHASIS ON ESTHETICS AND WILDLIFE

(By Mary I. Burks, vice president, The Alabama Conservancy)

To ensure understanding let me define clear-cutting as removal of timber and other vegetation from a tract of land. Clear-cuts may vary from a few acres to thousands of acres. My remarks will be largely directed to clear-cuts of 25 or more acres, although much smaller clearings on steep slopes or other improper sites are highly destructive. I consider clear-cutting to be useful only as a tool, not as the basic management system. In Alabama it is almost always a preparation for pine monoculture. Dr. Eugene Odom, one of the nation's most foremost ecologists, says:

"Man must, of course, convert some of his landscape to his more direct use, but what is dangerous is the wholesale replacement of a diversity of vegetation with one kind of tree or crop. Such 'machine monoculture', . . . produces a situation that is extremely vulnerable to disease and climatic stress. We should have learned in the South, after our experience with the boll weevil and cotton, which was planted on all kinds of land not suited to it. Diversity is not only a protection against a wipe-out that would bring an economic disaster, like the boll weevil, but also avoids excessive pollution from powerful chemicals, fertilizers and pesticides, that are necessary to maintain high machine monocultures."

HOW DOES THE PUBLIC VIEW THE MANAGED FOREST?

At their invitation I have spent literally thousands of hours speaking to thousands of people. The demand for forest recreation is growing at the rate of 8 to 12 per cent each year, and many Alabamians are deeply disturbed by what they see in our forests. They instinctively know that they are losing something priceless—the unmanaged natural forest. In its place they are getting trees grown as crops on cleared land.

They find these new forests ugly, subject to erosion, filled with brambles in youthful stages and green deserts at maturity. They don't like what they see. In The Bankhead National Forest in 1969 and 1970 they said so by putting out hundreds of placards reading "Join the Forest Service and help stamp out wildlife," "Wildlife can't eat just pine cones," and many more.

Probably most of you manage private timberlands. My experience with clear-cutting is largely on public lands. But since the National Forests in Alabama are under extreme pressure to practise clear-cutting, even-aged management and pine monoculture for the benefit of the industries which buy the taxpayer's timber, I feel that my observation will be applicable to private lands as well.

WHY MUST WE INCREASE TIMBER PRODUCTION?

The U.S. National Forests contain only 19 per cent of the nation's commercial forestland. Yet former Forest Service Chief Edward P. Cliff said, in January 1971, that the national forests were producing 15.9 billion board feet of timber annually, or a quarter of the U.S. supply. The Department of Agriculture is now seeking to increase timber yields in or public forests by 60 per cent, making 19 per cent of the nation's forestlands produce 40 per cent of the nation's lumber. The taxpayer is told that his land must be forced in overproduction to meet the demand. What he is told is that this demand is from the world market. In 1968 4.1 billion board feet of logs and lumber were exported, mostly to Japan.

It is significant that the timber industry in 1968 had the highest profit of any U.S. industry according to the Federal Trade Commission. This statement

is borne out by the Georgia-Pacific Company's quarterly financial report which states:

"We are pleased to report new all-time quarterly records were established for sales and cash flow during the first three months of 1972 with earnings the second highest ever produced, topped only by the all-time record set in the first quarter of 1969."

This is the company that says we cannot afford wilderness in our national forests, because we must increase production. Clear cutting is the basic management policy advocated to achieve this increase.

In the South, private lands are also to be forced into maximum production of cellulose under the Third Forest concept. Small land owners are to be coerced, coerced and even subsidized with public money, under the Rural Environmental Assistance Program, which will pay up to 80 percent of the cost of converting unmanaged hardwood forests and cattle ranges to pine monoculture. Clear cutting will be the means of attaining this conversion. In *Forest Soils and Forest Growth* Professor S. A. Wilde of the University of Wisconsin says, "with very few exceptions clear cutting leads to a general deterioration of soil fertility, a fact . . . well known to American foresters and soil specialists." Why should Alabama's land pay such a terrible price to supply the world market for the nation's most profitable industry?

Alabama's forests will bear the brunt of this forced productivity with scant regard paid to soil fertility, aesthetics, recreation, wildlife or watershed production. Therefore the observations of timber management made by The Alabama Conservancy in the Bankhead National Forest have relevance and importance for the whole state.

THE WILDERNESS PROPOSAL

Three years ago the Alabama Conservancy began a search for any remaining natural areas in Alabama which might contain virgin forest. Our hunt inevitably ended in the Bankhead National Forest where the only significant remnant of Alabama's natural heritage still remains. There the Conservancy requested that 11,000 acres be set aside in the National Wilderness Preservation System after the Forest Service stated that it planned to clear cut and convert this forest to pine except in the inaccessible gorges and the 1240 acres around Bee Branch. Since 1969 we have unswervingly sought statutory protection as the only means to save this rare and fragile area from death by clear cutting.

The Canyons of the proposed Wilderness are not self-sufficient. They obtain their water from slope wash and subsurface seepage from the divides above. Clear cutting the uplands would flood the gorges in wet seasons and desiccate them during drought. Plants and animals dependent on moisture would perish. I saw just such destruction in the cliff above Borden Creek on which a rare fern was dying in a place where it formerly flourished. A trip to the top revealed an extensive root-bladed clear cut which was drying out the canyon rocks below.

FOREST SERVICE SOIL STUDY

In 1970 the Forest Service made a soil study in the proposed wilderness and found the cliff slopes and streams bottoms of the Sipsey Fork and its tributaries "represent the ultimate in hardwood sites to be found in Alabama, and in fact, there are few areas in the country where the potential productivity of quality hardwoods match this management unit." The Soil Study also found that 65 per cent of the wilderness study area, or 7000 acres, was "poorly suited" to "hazardous" for intensive forestry management, that is clear cutting. It was also hazardous for road building due to erosion danger. That left only 4000 acres which might be withdrawn from timber production, yet some members of the forest industry still oppose saving even this small area from clear cutting and conversion to pine.

THE WILDERNESS FEASIBILITY STUDY FINDINGS

The Wilderness Committee, of which I am chairman, conducted a feasibility study during 1970 to which data are still being added. Nine field reports were made by specialists in their fields covering animals, plants, geology, speleology and history.

In essence what do our studies show to be wrong with clear cutting? It destroys the diversity of the natural forest, and diversity is the means by which all life has survived on this planet. A natural forest is a highly complex community with hundreds of species of plants each occupying its own niche and each providing niches for many kinds of animals.

Botanically Alabama is one of the richest states in the nation with approximately 2500 recognized forms of trees, shrubs, wildflowers and other vascular plants. Clear cutting wipes out native species not found elsewhere or abundant only here. Rare plants living at the limits of their survival area are driven out. Clear cutting to the extent advocated by the Third Forest could eradicate even common species. The Bankhead is a microcosm of Alabama plant diversity because three physiographic provinces meet within it. Many of the wilderness plants are among rare and endangered species.

Man, and every other creature on earth, is ultimately dependent upon the plants, which in turn are dependent upon the seven or eight inches of top soil which made their growth possible. It takes 2000 to 7000 years to produce this life giving layer of humus. The forest with its undergrowth is the best defender of the soil because it has a complex plant cover, which retains rain water. One square yard of moss weighing 2.2 pounds can retain 11 pounds of water after a heavy rain. In Ohio studies showed that 174,000 years would be needed to remove seven to eight inches of humus by run off from a forest—but only 15 years to remove it from an ordinary corn field. Clear cutting converts forests to farms—of trees.

ALABAMA'S ANIMALS

Alabama's animal life is outstanding. There are around 250 species of fish living in Alabama's freshwater streams, more than in any other area of comparable size in the United States. Many of these fish have been driven out of our major rivers by pollution, siltation, damming and ditching. Now they are found only in such rivers as the Sipsey and its tributaries, which serve as a refuge for rare fish and several endemic species discovered by the feasibility study. Clear cutting endangers these fish by hastening run off, lessening seepage, disrupting springs, increasing the fluctuation of stream levels and causing erosion and siltation.

About 372 species of birds have been recorded in Alabama—200–250 in the inland counties, of which about half are woodland birds. In the Bankhead there are 80 species of woodland birds, of which 48 must have hardwoods to survive. Because birds are so mobile, the ecological health of the Sipsey may affect populations of birds several thousand miles away, which depend on the Bankhead during migration or for winter habitat.

Clear cutting claims to improve habitat for game animals, but wildlife is not simply deer, turkey, bob-white and squirrels. It is all the interdependent life in a forest from the unseen bacteria and fungi busy converting the dead litter to life giving humus through the millipedes, spiders, insects, worms, lizards, salamanders and snakes on up the chain of life to the game fish and animals. It is only at the peril of losing everything that we place too much emphasis "on the dominant species with little feeling for the equally important, if less exploitable, members of the forest ecosystem," according to Dr. Arnold Bolle, Dean of the School of Forestry at the University of Montana.

GENE POOLS

One of the most important reasons for establishing wilderness or unmanaged forest is to save the gene pools of plants and animals which are often unrecognized or ignored by the commercial exploiters. Wilderness saves the flora and fauna which we do not yet have the knowledge to understand or the wisdom to appreciate. These gene pools may carry the inheritance which we must have in the future to breed survival values back into our soils, plants, and animals.

Alabama cannot afford to lose its natural forest communities of plants and animals. We cannot afford to erode away our top soil, silt up our streams, or degrade natural areas needed for outdoor recreation. Who can be held accountable for these practical and esthetic values? If the foresters do not take the responsibility then where can the taxpayer turn? The citizen only knows how to go to his legislator or Congressman and ask for laws to protect his forests. Such laws are now being considered on the state and federal level all over this nation.

STATEMENT OF J. WALTER MYERS, JR., EXECUTIVE VICE PRESIDENT, FOREST FARMERS ASSOCIATION

Forest Farmers Association is an organization of timberland owners and primarily small, nonindustrial private owners in 15 Southern states. Our association wishes to present its views on the above listed bills which would establish a com-

mission to investigate and study the practice of clearcutting of timber resources of the United States on Federal lands.

After careful review of these proposals, the Forest Farmers Association feels that the purpose of these proposals has already been accomplished. The Senate has recently conducted a thorough study of this matter and suggested guidelines for clearcutting have been published by the Senate Subcommittee on Public Lands, chaired by Senator Frank Church of Idaho. The Chief of Forest Service has indicated agreement with these guidelines, and most of the recommended practices are already in use. Included in the investigations by the Senate Committee was a report by the deans of five prominent schools of forestry in different parts of the country. In addition, it is understood that the subject of clearcutting is also being studied by the Seaton Panel on Timber Supply and the Environment, appointed by the President.

In view of the foregoing Forest Farmers Association does not feel that H.R. 14354, H.R. 14888, H.R. 15042 and H.R. 15077 are needed nor are they likely to contribute importantly to developing additional information on the practice of clearcutting.

In this regard, Forest Farmers Association endorses a resolution passed by the Board of Directors of the American Forestry Association during its annual meeting in 1971. This resolution reads as follows:

"The Board of Directors of The American Forestry Association, in Annual Meeting assembled at Seattle, Washington, this 10th day of October, 1971, reaffirms its support for multiple use and sustained yield management of all public and private forest lands of the nation. While recognizing the desirability and importance of some restricted use withdrawals of forest lands in the public interest, the Board is convinced that growing populations and their increased demands for all products and services of the forest lands—timber, water, wildlife, recreation and forage—will limit the amount of such land which can or should be set aside for restricted use purposes.

In furtherance of such multiple use management, AFA has long considered clearcutting as a proven forest land management tool and recognizes that many forest types can best be harvested and reproduced by a complete or near complete removal of the mature or over-mature forest. While AFA defends clearcutting as a indispensable silvicultural tool, it recognizes that excesses in the use of this practice have occurred in such aspects as size of cut and its use on certain sites where its application was questionable.

In recognition of the importance of this practice to the multiple use management of many of our forest lands we support the continued use of clearcutting and oppose any moratorium or ban on its use."

STATEMENT OF PAUL V. ELLEFSON, DIRECTOR OF ENVIRONMENTAL PROGRAMS,
SOCIETY OF AMERICAN FORESTERS

The Society of American Foresters, with more than 17,500 members, is a nationwide organization representing all segments of the profession of forestry in America including public and private practitioners, researchers, administrators, educators and forestry students. Of concern to the Society is the sound management of the forested third of the nation.

Since before the turn of the century forestry professionals have investigated a wide range of subjects concerned with even-aged forest management. Among this range of subjects has been the practice of clearcutting. Because of the growing interest in the management of the nation's forests and the ever increasing value ascribed to these lands by the American public, forestry professionals have seen fit to expend commensurate effort in the study of clearcutting. As a result, the practice of clearcutting has become one of the most thoroughly studied of all forest management practices.

There are a number of studies on clearcutting which fulfill wholly or in part the objectives set forth for the proposed "Interdisciplinary Clearcutting Practice Study Commission." A few of the most recent studies include the following:

March 1972.—report of the Subcommittee on Public Lands of the U.S. Senate Committee on Interior and Insular Affairs ("Clearcutting on Federal Timberlands"). The Subcommittee conducted hearings on management practices on public lands, including clearcutting, and suggested a series of policy guidelines.

September 1971.—appointment of the President's Advisory Panel on Timber and the Environment. The Panel is studying a wide range of timber management issues, including clearcutting, and is expected to report this year.

July 1971.—five independent regional reports on clearcutting prepared for the Council on Environmental Quality by deans of forestry schools at the University of Washington, Colorado State University, Michigan State University, Duke University and Pennsylvania State University.

July 1971.—report of a Study Team of the Forest Service, Department of Agriculture ("Forest Management in Wyoming"). The Study Team reviewed timber management practices, including clearcutting, on the Bighorn, Shoshone, Teton and Bridger National Forests.

April 1971.—report of a multidisciplinary team of the Forest Service, Department of Agriculture ("National Forest Management In A Quality Environment—Timber Productivity"). The team reviewed problem situations involving timber harvesting on national forests and made recommendations which are treated in a recently prepared Forest Service Action Plan.

November 1970.—report of a Select Committee of the University of Montana ("Report on the Bitterroot National Forest"). The Committee reviewed the practice of clearcutting and the role of timber production on the Bitterroot National Forest.

August 1970.—report of the West Virginia Forest Management Practices Commission. The Commission reviewed timber management activities, including clearcutting, on the Monongahela National Forest and made recommendations to the Forest Service, Department of Agriculture.

June 1970.—report of the Special Review Committee of the Forest Service, Department of Agriculture. The Committee examined current and planned timber management activities, including clearcutting, on the Monongahela National Forest.

April 1970.—report of the Forest Service, Department of Agriculture joint Northern Region—Intermountain Forest and Range Experiment Station Task Force ("Management Practices on the Bitterroot National Forest"). The Task Force studied forest land management practices, including clearcutting, on the Bitterroot National Forest.

These reports reflect only a small part of the extensive research that has been undertaken on virtually all aspects of forest management. Research on the subject of even-aged forest management alone occupies thousands of pages in the literature of American forestry.

The Society of American Foresters urges the Subcommittee: (1) to consider the wealth of knowledge which has already been gathered on the subject of clearcutting; (2) to consider that the subject of clearcutting has been reviewed by the Subcommittee on Public Lands of the U.S. Senate Committee on Interior and Insular Affairs and that the Forest Service has responded to the Subcommittee's suggestions by initiating plans for treating thirty problem situations ("National Forests in a Quality Environment: Action Plan," June 1972); and (3) to compare the value of any additional knowledge gained from public investment in a Commission to study clearcutting, with a similar expenditure in quality supervision of clearcutting practices and other national forest program needs.

The Society of American Foresters thanks the Subcommittee for the opportunity to present its views on legislation affecting an area of vital concern to forestry professionals. We will be pleased to further assist the Subcommittee.

STATEMENT OF ARNOLD W. BOLLE, DEAN, SCHOOL OF FORESTRY, UNIVERSITY OF MONTANA

My name is Arnold W. Bolle. I am the Dean of the School of Forestry at the University of Montana in Missoula. As a professional forester I want to briefly express my reasons for supporting H.R. 14354 introduced by Congressman Donald M. Fraser. Clearcutting has become the focal issue of a controversy involving the management of our forest lands. I have been involved in this controversy because of the report that was made on the Bitterroot National Forest for the Senate Interior Committee by a group of faculty of the University of Montana under my direction.

In the Hearings held by the Senate sub-Committee on Public Lands a year ago there was also universal agreement that clearcutting was a legitimate tool of forest management. I so testified as did representatives from industry, federal agencies, conservation groups. However, while there was widespread support for clearcutting there was also widespread acknowledgment that the problems really lay in the *abuse* of clearcutting. These abuses were largely attributed to the overemphasis on

timber production on the National Forests to the neglect of other multiple use values. The *Guidelines on Clearcutting* issued this spring by the sub-committee clearly define the limits of the use of clearcutting and should eliminate most of the past abuses of the practice on public lands. There appears to be widespread acceptance of the Senate Guidelines by federal agencies, forest industries and conservation groups. As I understand it, these guidelines do not have the force of law while a presidential order recommended by the CEQ, but not enacted, would have had. However, the Senate guidelines are sure to have a considerable effect on the management of our public lands and, in fact, they already have had and the Forest Service in Montana, at least, is making important changes in its management programs.

It may seem redundant, therefore, to propose another study of clearcutting at this time. I am sure that I am at odds with many of my fellow foresters who feel that technical decisions on the use of forest lands should be left to the professional foresters. While I agree with this view, I believe that this is more than a technical decision and involves dimensions which are the purview of the broader public and should therefore have the benefit of broader public consideration.

In my opinion the professional in any field; education, health, defense or forestry and natural resources has an important but specific role to play. He carries out the demands of society in his area of expertise, he lets the public know the opportunities and possibilities available for choice in setting policies and he can inform and warn the public of the consequences of the choices it may make. But he is no better qualified than the general public in deciding what is good for the public or what it ought to do (within safe limits) with the forests and related resources of forest lands. In making such decisions the public should and needs to be involved.

We are involved in an important period of change in the public's choice of uses of forest lands. Over the past few years a new value system has evolved in the public's attitude toward its land resources. While not fully articulated or defined, these values in some cases run counter to the established systems of management of our public as well as private lands. The controversy which has arisen lies in a certain dissatisfaction with out institutional arrangements which have been reluctant to change. This reluctance to change can be attributed partly to normal inertia but more importantly lies in the difficulty of clearly identifying the public's needs and desires. The goals of multiple use management are not clearly identified and perhaps can never become fully identified because they are in a constant state of change.

My reasons for supporting H.R. 14354 lie in my hope that it can help make these important and necessary changes; first, to reduce the resistance to change and, secondly, to involve public participation in identifying the changing values of the public in the use and management of our forest lands so that we, the professional foresters, can do a better job of producing the combination of goods and services needed by the public without impairing the future productivity of these lands. In brief I see the principle value of such a study as developing better rapport between the public and the professionals who are managing these lands for the public benefit.

While I may to some extent be anticipating the result of such a study, I am convinced from my own observation that a great deal of the problem lies in the lack of support and understanding the the management of our forests. While the stated policies call for broad multiple use management of our forests, the support to the agencies has over-emphasized timber production and largely neglected the watershed, wildlife, grazing, recreation and aesthetic values of the forest. To their credit, most professional foresters have been unhappy with this situation but have attempted to carry out what appeared to be the wishes of Congress and the Administration. They now chafe under the public criticism which has been directed at them and most of them are eager to do the broader job of management which they know is needed.

I see an important further advantage of H.R. 14354 in developing a better understanding in Congress and the Administration of the level of support which is needed to accomplish the job of multiple use management which we all agree is necessary.

NATIONAL WILDLIFE FEDERATION,
Washington, D.C., June 20, 1972.

HON. JOHN L. McMILLAN,
Chairman,
Washington, D.C.

DEAR MR. CHAIRMAN: The National Wildlife Federation appreciates your invitation to comment on H.R. 14354, a bill to establish a commission to investigate and study the practice of clearcutting of timber resources of the U.S. on Federal lands. In lieu of testifying before your committee we are submitting this statement to make our views a matter of public record.

The Federation seriously questions the need for another clearcutting study, in view of its projected cost and the fact that at least two other comprehensive studies of clearcutting have been made recently. One of the studies was made by the heads of five schools of forestry at the request of the Council on Environmental Quality. Actually, this study consisted of five independent regional studies which researched the history, status, and rationale of clearcutting practices on federal lands. The other study was made by the Public Lands Subcommittee of the Senate Committee on Interior and Insular Affairs. As a result of its study, the Public Lands Subcommittee developed certain guidelines associated with clearcutting practices on federal lands. These guidelines are quite comprehensive and, if followed, will insure that the environment is not degraded and that full consideration will be given to the protection of all natural resource value in the harvesting of timber. It is our understanding that the U.S. Forest Service has accepted these guidelines and is putting them into practice.

While we recognize that the technique of clear-cutting has been greatly misused and abused in the past, the National Wildlife Federation feels that sufficient attention has been focused on the issue to insure that proper corrective action is taken. We have long felt that clear-cutting is an acceptable method of harvesting timber provided it is done in a scientific manner taking into consideration such factors as steepness of slope, erodability of soil, and recreation potentials. Actually with some species of trees such as Douglas Fir clear-cutting remains the only viable method for regenerating new growth. Therefore, if clearcutting is done in a reasonable manner taking into full consideration the above factors and in such a fashion that the clear-cut patches are small (i.e. not greater than 40 acres), of irregular shape, and blended into the contours of the topography, the Federation feels that clear-cutting is a sound forestry management technique that can enhance wildlife habitat values.

In view of the above, and because the establishment of, and support for, a clear-cutting commission would cost \$2.5 million, and the end product of the commission would, in large measure, duplicate work already done by others, the National Wildlife Federation does not support H.R. 14354.

Sincerely yours,

THOMAS L. KIMBALL, *Executive Vice President.*

THE IZAAK WALTON LEAGUE OF AMERICA, INC.,
June 26, 1972.

HON. W. R. POAGE,
Committee on Agriculture,
Longworth Building, Washington, D.C.

DEAR MR. CHAIRMAN: We have noted the Committee's deliberations on H.R. 14354 and other bills to establish an Interdisciplinary Clearcutting Practice Study Commission to investigate the practice of clearcutting on public lands.

As you know, the U.S. Forest Service, which would be most involved in such a study, has recently announced its plan to improve management of timber lands in the National Forests. From what we have been able to determine thusfar, the key features of this plan should set the stage for further improvements in the protection and management of forest environments. The establishment of a commission such as envisioned in H.R. 14354 seems, in our judgment, most timely in view of the Forest Service's current action. The Commission could continue to focus attention on effective solutions to clearcutting problems; overview implementation of the Forest Service plan; provide a comprehensive bank of information and data on clearcutting practices against which improvements could be gauged; and bring to public light the needs of our forest management agencies in meeting their responsibilities. The Izaak Walton League of America hopes H.R. 14354 can be passed.

An article from the June 25 issue of the Washington Post is enclosed with this letter, and we ask that both be made part of the hearings record.

Sincerely yours,

TED PANKOWSKI, *Director, Environmental Affairs.*

[From the Washington Post, June 25, 1972]

FOREST SERVICE PLAN CURBS THE MASS CUTTING OF TREES

(By Mary Russell)

The U.S. Forest Service adopted a plan yesterday to improve its management of timber lands in the 155 national forests in the country.

The primary purpose of the plan, according to John R. McGuire, chief of the Forest Service, is to restrict "clearcutting"—a practice in which all the trees in a tract of land are cut at once. Conservationists have long charged that clearcutting causes soil erosion and stream pollution, drives out wildlife and generally destroys the forest environment. The Forest Service plan is in direct response to guidelines set forth by the Senate Subcommittee on Public Lands, according to McGuire. The subcommittee, headed by Sen. Frank Church (D-Idaho), criticized the Nixon administration for what it called "backing away" from regulation of clearcutting.

An executive order on clearcutting had been prepared for President Nixon's signature in January.

But according to a report by the conservationist Sierra Club, the order was scuttled after a meeting in Secretary of Agriculture Earl Butz's office which included Forest Service officials. The meeting was held at the behest of officials of the National Forest Products Association, the Sierra Club said.

Church then said he would set the guidelines the Nixon administration refused to set.

The key features of the Forest Service plan include:

"Increased Forest Service sensitivity to esthetic values in timber harvest, road construction and preparation of harvest sites for new planning."

Withdrawing land that would be harmed by clearcutting from harvesting use until improved logging methods are found.

Deferral of clearcutting on any tract where there is no assurance a new stand of trees can be generated in five years.

Preparation of a formal environmental impact study whenever land is to be converted from one type of vegetation to another, such as trees to grass or one tree type to another.

Certain clearcutting proposals will be reviewed and approved at the forest supervisor level.

Temporary roads for logging activities will be brought up to permanent road standards or obliterated.

UNIVERSITY OF MINNESOTA,
June 26, 1972.

FORESTS SUBCOMMITTEE,
AGRICULTURE COMMITTEE,
House of Representatives,
Washington, D.C.

GENTLEMEN: I write in support of H.R. 14354 and identical bills "to establish a commission to investigate and study the practice of clearcutting of timber resources of the United States on Federal lands.

Clearcutting has been shown to be an efficient method of lumbering in certain forest types, such as Douglas-fir and jackpine, providing the area is to be reseeded in these or similar types that require abundant light for regeneration and fast early growth. The adaptation of these tree types to such conditions is primarily a result of evolution under the natural occurrence of forest fires: periodic fires open up a forest to light and permit the natural seeding and regeneration to create a new even-aged stand, generally of the same forest type. Clearcutting is also an efficient cutting method regardless of future use of the land, because it permits the free use of heavy mechanical equipment and the easy construction of roads, skid trails, etc.

On the other hand, clearcutting devastates a scenic landscape, especially if it is done carelessly and without regard for cleanup or erosional damage. Regrowth

is frequently slow, because a re-seeding may not take, and several decades may pass before the area looks like a forest again.

The issue is thus joined between (1) the economics inherent in clearcutting in certain forest stands, and (2) the scenic values of the forest that might be preserved by prohibition of cutting, or damaged only moderately by selective cutting in place of clearcutting.

The economic factors of timber cutting in particular areas are difficult to evaluate, because of the necessity of calculating timber supplies and markets for several decades ahead, as well as estimating growth rates of the trees themselves. But at least some calculations and forecasts can be made. Evaluation of the scenic factor, however, is a much more difficult task. Of particular importance here is the virgin forest, which has not only scenic and aesthetic value to the layman but scientific value to the ecologist. Here is where the economics of timber production must be compromised in recognition of competing and incompatible uses.

The virgin forests have developed over the centuries in sensitive adjustment to their environment. The adjustment has been dynamic, for the gradual successional development in many forests has been punctuated by fire or disease or other natural events. Such forests have obviously been successful producers of wood. They also harbor appropriate wildlife, as well as other components of a complex ecosystem. Virgin forests should not all be destroyed for the purpose of exploiting the wood products or the wild game, for once severely modified by clearcutting and replanting the forest ecosystem that eventually develops is no longer natural, and the resource for scientific research and aesthetic appreciation is thereby lost.

Timber cutting in the East in the last 150 years essentially destroyed practically all the virgin forests, including both the conifer forests of New England and the coastal plain and the hardwood forests of the Appalachian Mountains. Only a few small remnants remain in areas protected from timber sale, and these continue to be under pressure for destruction. The forests that have regrown in thier place are now mature and highly suited for certain recreational uses, but they provide limited opportunity for scientific or aesthetic appreciation of natural ecosystems.

In the northern Great Lakes region the widespread conifer forests were largely decimated in the same way during the period 1870-1930 by clearcuttings. Only one large block remains untouched—the Boundary Waters Canoe Area (BWCA) of northeastern Minnesota, which is part of the officially designated wilderness system. Although approximately half of this million-acre tract is fully protected from timber cutting, the other half has either been clear-cut in recent years or is still subject to such fate as a result of contracts let to private timber companies, according to an administrative policy of the U.S. Forest Service that essentially provides an exception to the intent of the wilderness act. The BWCA is by far the most heavily used recreational area in the wilderness system, for it provides a great expanse of interconnected lakes midst hilly terrain, suitable both for canoeing and hiking. In view of the demonstrated recreational use of this area and its value for scientific research, it makes little sense to continue to reduce it in size by clear-cutting on the fringes.

Almost all of the virgin timber in the areas under contract in the BWCA is jackpine, which is used primarily for paper products rather than for house-building or other construction purposes. Yet there has been a surplus of pulpwood in northern Minnesota for many years, and the market continues to be depressed. Jackpine is a fire tree that occurs in even-aged stands and is most efficiently taken by clearcutting. If this form of timber cutting were prohibited in the BWCA, undoubtedly the contracts would lapse, because selective cutting would not be profitable when the commercial quality of the stands is so low anyway.

The Forest Service policy in the BWCA is generally to follow clearcutting of jackpine by hand planting of red pine, which is a more valuable tree commercially and also requires light for early growth. The forest is thereby artificially changed in composition overnight, and it has limited recreational value for several decades and much-decreased scientific value for many more years. Although some limited planting on cut-over Federal forest lands has been accomplished in this region in the last 25 years, the program did not start soon enough, and the trees are not yet big enough to harvest.

On the other hand substitute timber exists on both public and private lands in the region outside the BWCA, so that the local industry will not suffer by shifting its contracts to slightly different areas. Slight improvements and modifications in mill technology would permit a higher proportion of aspen and other hardwoods to be used for paper manufacture, and the availability of mature aspen on good sites in the area is almost unlimited.

In the western mountains, virgin forests are combined with the scenic values provided by distant views and interesting topography. Much of the commercially valuable forest land is dominated by fir trees like Douglas-fir, lodgepole pine, and redwood. Many of these species grow to greater sizes and have longer regeneration times than the pines of the Great Lakes region, and much of the timber goes to the sawmill rather than the paper mill. In this situation, an immediate shift to plantation forests poses more problems. In the long run, of course, it will have to be done, as has been the case in Switzerland and the rest of Europe. But additional control must be instituted before the virgin forests are further decimated.

Much of the shift to plantation forests should be planned on a national basis, for certain areas are much more suitable for well-planned wood production than others. The long seasons, fast rates of growth, and easy management on the sand plains of coastal Georgia, for example, make these areas more suitable than the rocky hills of the BWCA or the inaccessible mountain slopes of Montana, where recreational uses come into abrupt conflict with the clear-cutting practices.

So here some choices must be made, while there is still the chance. A national policy must be developed to shift the timber industry from virgin forests to plantation forests. Exports of virgin timber should be restricted. The national forests of the West should be systematically evaluated with respect to scenic and recreational values, with the objective of withdrawing large acreages from clear-cutting. Selective cutting with limited road-building or other disturbance might be permitted on some of these areas, with the realization that in some cases the operation will be less efficient and thus more expensive. But the expense of forest destruction to the recreational and scientific resources of the nation has heretofore not even been entered in the cost analysis.

Forest economics should be placed on a new basis, so that the social and environmental costs of clearcutting can be evaluated in some realistic way. Cost analysis has been handled heretofore largely by the timber companies, or by staff of the Forest Service who consider only the traditional costs of timber production and the market. Independent studies should be made instead, to include not only the environmental costs but also the hidden costs represented by Forest Service maintenance of forest stands, administration of timber contracts, and re-planting and clean-up. Figures in the BWCA show, for example, that much more is spent by the Forest Service in these ancillary costs than is returned to the Federal government in timber sales. The American people should not be expected to subsidize the timber companies in destruction of the national forest resource.

The issue of clearcutting on Federal lands is sufficiently complex in different parts of the country that a comprehensive study of timber policy and timber economics should reveal the facts and relations necessary for the formulation of a national policy. It is true that the Forest Service has recently made studies of a part of this problem, but continued management according to traditional goals and policies indicates that little change can be expected, despite the steady opposition of congressional committees, conservation groups, and various professional foresters and other scientists.

The proposed bill, H.R. 14354, will provide the means for such a study. Besides considering such factors as the social and environmental aspects of clear-cutting, the economic viability of the timber industry independent of indirect Federal subsidy, and alternatives to clearcutting in different timber stands, the study might also include a survey of areas of virgin forest throughout the country, so that additional major areas can be considered for withdrawal from timber-cutting, especially clearcutting. It is only through such a study that the Congress and the public can understand the total national resource that is represented by the remaining virgin forests, and can realize the sacrifice, small or large, that must be provided to retain this resource for recreational and scientific use in the future.

Sincerely yours,

H. E. WRIGHT, *Professor and Director.*

YALE UNIVERSITY,
New Haven, Conn., June 27, 1972.

Representative DONALD M. FRASER,
U.S. House of Representatives,
House Office Building,
Washington, D.C.

DEAR REPRESENTATIVE FRASER: I would like to have my strong support of bill H.R. 14354 entered into the Congressional Record. As coprincipal director of the Hubbard Brook Forest Ecosystem research program, I am well aware of the

complexities of forest ecosystems and the difficulty of making broad scale decisions regarding clearcutting, particularly as our national forest resource is characterized by substantial ecological variability. Yet, current management practices and needed utilization of our forest resources requires that decisions regarding clearcutting be made. For these decisions to be made in the best long term interests of the nation, it is necessary for us to gather and analyze all the available facts, and to determine which harvest techniques conform with basic ecologic limits and yet provide a viable method of economically using our forests.

The proposal, H.R. 14354, to establish a qualified commission to examine all aspects of clearcutting and to report to the Congress within 18 months is an excellent way to bring all our knowledge to bear for the wise management of our federal lands.

Sincerely yours,

F. HERBERT BORMANN,
Oastler Professor of Forest Ecology.

BOISE CASCADE,
WOOD PRODUCTS DIVISION,
Steilacoom, Wash., June 27, 1972.

HON. THOMAS S. FOLEY, M.C.
*House Office Building,
Washington, D.C.*

DEAR CONGRESSMAN FOLEY: I wish to convey to you some views regarding H.R. 14354 which was before hearings by the Subcommittee on Forests of the House Agriculture Committee on June 20th (and identical bills H.R. 14888 and H.R. 15042). As you know, this bill would propose appropriating 2.5 million dollars for an 18 month study of clearcutting on Federal lands.

We wish to express to you our concern over the implications of this proposed legislation, recognizing the potential impacts upon the State of Washington if in fact such a study were to ultimately declare clearcut harvesting as a non-usable timber management tool. We know that the McGee Bill, S. 1592, would have placed a moratorium on such harvest practices for a two year period, and in this regard H.R. 14354 might have more palatable aspects.

The main point we find however, is that substantial past study has shown that clearcutting is a desirable and necessary timber management tool in attempting to maximize timber yields from the forest lands of the Northwest and in other areas of the country, being only one of a number of different management tools necessary for the forest manager to use in management of the resource. Further, the past history of clearcut useage (including some of the greatest clearcuts of all—some of the major fires of the past century or two) give clear evidence that such practices are clearly within the confines of acceptability where properly applied, both environmentally and in terms of maximizing public benefits from yields in goods and services from these lands.

We believe it is in the best interest of the United States to allow continued professional judgment to be exercised by the land managers (in this case the federal agencies) in management of the nation's public lands. Thus, we cannot in any measure support future enactment of this bill or any like it as no valid reason exists for such a study.

We would urge that this bill then be opposed since it would not be in the interests of the taxpayers or public at large. We wish to request that you insert this letter into the hearing record.

Thank you for giving this matter your attention.

Yours very truly,

RAY E. JOHNSON, *Region Manager.*

AMERICAN FORESTRY ASSOCIATION,
Washington, D.C., June 28, 1972.

JOHN L. McMILLAN,
*Subcommittee on Forests, House Committee on Agriculture,
Longworth House Office Building, Washington, D.C.*

DEAR MR. CHAIRMAN: With your permission we would like to ask that this letter be included in the June 20, 1972 hearing record on H.R. 14354 and identical bills to establish a commission to investigate and study the practice of clearcutting on Federal lands, as the official statement of The American Forestry Association.

The American Forestry Association is a national conservation organization with more than 75,000 members. Since our founding in 1875 we have vigorously advocated the application of sound forest conservation practices on the public lands. For this reason we are deeply interested in any measure which will improve the quality of management given these lands and appreciate the invitation to submit these comments.

We are certain that H.R. 14354 and similar bills were conceived in this same spirit, and we commend the sponsors of these bills or responding to the recent expressions of concern over clearcutting on the public lands. We also commend you, Mr. Chairman, and your committee for scheduling these hearings.

Studies come in all shapes and sizes. As has already been noted by several witnesses before this committee, at least ten studies and reports have been completed on the subject of clearcutting on national forest lands since the Forest Service itself issued the 1970 Bitterroot report.

From the most recent of these documents, released on March 29 by the Senate Subcommittee on Public Lands, has come a set of guidelines for public lands timber management, as well as recommendations on several areas of badly needed research.

While there is general agreement from all quarters that the Senate report and guidelines are not the final word on clearcutting, the guidelines are, we believe, a workable set of ground rules, and are already being implemented by the Forest Service.

Under these circumstances we question the need for a Commission study of the sort proposed in H.R. 14354, for fear that it would only cover old ground when what we must do, in the words of Gifford Pinchot, is to continue to break new ground.

Therefore, we recommend that the \$2.5 million which H.R. 14354 calls for, be spent instead on research into some of the problems brought to light by clearcutting studies already made.

For example, serious questions have been raised regarding the effects of clearcutting on soil nutrient loss. Research on this topic has been carried on for a number of years both by the Forest Service and by several forestry schools. But results are still inconclusive, and more intensive study is needed in this area.

Soil stability and other characteristics are affected by clearcutting and the road-building which accompanies it. Research is needed to better define these effects so that fragile soils may be protected and unsuitable clearcutting sites identified.

The need for new techniques in harvesting methods and equipment is another area where funds could be applied.

Closely allied with clearcutting in some areas is the need to further understand environmental effects associated with the planting of large areas to single tree species—so-called monoculture. Questions of insect and disease potential are among those needing further study.

In summary Mr. Chairman, there clearly is a need for further study; but study of specific problems related to clearcutting rather than of the broad general subject area. For this reason, we recommend that H.R. 14354 not be passed, but that efforts be continued to provide the Forest Service with research funds needed to come up with answers to those questions mentioned above, and others that seem certain to arise as we continue to refine the management practices on public lands.

Thank you for your consideration of our views.

Yours truly,

WILLIAM E. TOWELL,
Executive Vice President.

Mr. FOLEY. The Chair wishes to thank all the witnesses; except for the congressional and administration witnesses, all the witnesses were heard in the order in which their appearance was given to the committee.

I know it is often difficult to wade through many hours of testimony, and you have been very patient. I think the hearings have been useful. I have to underscore again my concern that we really don't know very much about the effectiveness of commissions and probably less about that than the subject matter that this commission is supposed to study. We will give most careful consideration to the legislation before us. It may be the committee will decide to not report the

bill, or if they do, substantially alter the character of the commission envisaged by the legislation.

All statements that we have from all the witnesses will be helpful to us in making those decisions. The Chair thanks those in attendance. Without further statements, the subcommittee will stand adjourned to meet at the call of the Chair.

(Whereupon, at 3:55 p.m., the subcommittee adjourned.)



