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Verne L. Harper

A FOREST SERVICE RESEARCH SCIENTIST AND ADMINISTRATOR
VIEWS MULTIPLE USE

An Interview Conducted by
Elwood R. Maunder

Produced under cooperative agreement between the
United States Forest Service and the Forest History Society

Forest History Society
Oral History Office
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V.L. Harper photographed in 1967



1929 - Starke, Florida. Conference on naval stores regional problems. Left to right, F.I. Righter, V.L. Harper, James Beal, Lenthall Wyman, Perkins Coville, C.F. Korstian, Carl Hartley, P.V. Siggers.

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PREFACE

In the spring of 1970 I addressed a formal report to the chief forester and staff of the United States Forest Service which recommended a program of original research, writing, and gathering of documentary evidence that would reveal the history of the Forest Service and the progress of national forest policy. A part of my report called for a fresh and professionally conducted series of in-depth oral history interviews with both retired U. S. Forest Service personnel and with persons currently employed in key positions within the agency.

In February of 1971 the plan had been thoroughly reviewed by chief and staff and by an ad hoc history committee of the Washington Office of the Forest Service and several cooperative agreements were written to launch a professional examination of the subject. Among these was one with the Forest History Society of Santa Cruz, California, which provided for six in-depth interviews with Edward C. Crafts, former U.S. Forest Service assistant chief for Program Planning and Legislation and former director of the Bureau of Outdoor Recreation; Frederick W. Grover, former director of the Division of Land Classification; Verne L. Harper, former deputy chief for Research; Earl S. Peirce, former chief of the Division of State Cooperation; Hamilton K. Pyles, former deputy chief for Programs and Legislation; and J. Herbert Stone, former regional forester for Region 6.

This initial oral history series puts its focus upon the origins and development of the multiple-use concept. The interviews are not intended to explore all the possible avenues of information obtained on multiple use but to determine what gaps in knowledge on the subject might be filled by going into the memories of six men who had viewed the developing history from different aspects. Others should now be interviewed, most notably former Chief Forester Richard E. McArdle; director of the Division of Legislative Reporting and Liaison, Reynolds G. Florance; and other key persons such as associate chief, Arthur W. Greeley, and former director of the Division of Budget and Finance, Howard E. Marshall.

The program was set up under the newly-created History Office of the U. S. Forest Service and its chief, Clifford D. Owsley. I would like to here acknowledge Mr. Owsley's assistance in planning this series of interviews. My thanks are also expressed to John R. McGuire, Gordon D. Fox, Richard F. Droege, Chester A. Shields, and many others

in the Washington office of the U.S. Forest Service who contributed to the planning. Dr. Harold T. Pinkett of the National Archives, Natural Resources Division, Dean Emeritus George A. Garratt of the Yale School of Forestry, and Mr. John F. Shanklin, chairman of the Special Projects Committee of the Forest History Society, made important contributions to the planning of the program.

Special credit belongs to the members of the Oral History Office staff of the Forest History Society for their tireless efforts to research the careers of each man interviewed prior to the making of the interviews and for their dedication to the highest standards of scholarly procedure in transcribing, editing, indexing, and publishing the six volumes of which this is a part. Dr. Susan Schrepfer was the chief figure in this work and was ably assisted by Mrs. Barbara Holman and Miss Claudia Mehl. The end products are, of course, the sole responsibility of their several authors--the respondents and the interviewers. Each interview series has been read and corrected by the authors, and whatever errors of fact may appear here are solely attributable to them.

Elwood R. Maunder
Executive Director
Forest History Society
Santa Cruz, California

INTRODUCTION

Nineteen years ago the Forest History Society made its first efforts to tape record the memories of important men and women who have been either active participants or keen observers of forest and conservation history. This method of gathering important nuggets of history not found in earlier published or documentary sources was then only a pioneer venture at Columbia University under the direction of the noted American historian, Professor Allan Nevins. The Forest History Society became one of the first of what has become now a fast-growing list of hundreds of organizations and institutions that have entered the oral history field and contributed to its developing sophistication.

The following oral history interview was made on January 12 and 13, 1972, in Gainesville, Florida. The respondent, Dr. Verne Lester Harper, served from 1951 to 1966 as the deputy chief for Research in the Washington Office of the United States Forest Service. Dr. Harper retired from the Forest Service in 1966 after forty years of service. He joined the faculty of the University of Florida's School of Forestry and taught there as a professor of forest policy and administration until his retirement on August 31, 1972. He continues at the university as professor emeritus.

This work is one of a series of six interviews with retired Forest Service personnel undertaken by the Forest History Society under a cooperative agreement with the Washington Office of the United States Forest Service. The declared purpose of the series is to probe the memories of men for useful historical information on the origins and development of the multiple-use concept in the national forest policy of the United States. This particular interview approaches the subject from the point of view of a man whose main concern was research. Other interviews in this series seek insights into the same subject through questions posed to five other prominent Forest Service leaders listed in the preface.

Professor Harper and I met for a preliminary discussion of the interview in his home at 1812 S.W. 6th Terrace on the evening of January 11, 1972. We had previously met at national meetings of forestry and research groups and had exchanged correspondence from time to time for several years. This was, however, the first time that we had ever engaged in serious discussion of forest history.

The Harper home is a spacious, handsomely appointed, single-storied structure set on two acres of forest land only a short distance from the university campus. Dr. Harper takes an obvious pride in the mixed stand of pine and hardwood trees that grows around him and in the wildlife that is blessed with both the bounty of nature and the hospitality of Mrs. Harper. "She is our Sierra Clubber here," he chuckled, pointing out a number of well-placed birdfeeders and a squad of squirrels patrolling the yard. Over cocktails and a superb dinner, Les and Elizabeth Harper shared with me much good talk of contemporary affairs--local, national, and international. There was expression of environmental concern about Florida's rapid growth and of pride in the academic strength of the University of Florida as one of the leading research centers of the South. National politics, hippies, the Viet Nam war, and preservation of the wildlife area adjacent to the campus were entrees of spritely conversation that enhanced a thoroughly enjoyable act of true southern hospitality.

The interview itself did not commence until the next day when we agreed to meet following the professor's early morning lecture. The first session took place in the paneled study of the Harper home with the final sessions conducted in a suite of the Student Union Building on campus. The interview en toto ran to eighteen hours and was recorded on three tapes.

Verne Lester Harper was born in Monroe, South Dakota, on August 13, 1902, to Charles Leverett Harper and Eva Luceta (Gamble) Harper. The Harper family had once been in the hardware business, but during the childhood of the principal author of this interview it was engaged in farming first in South Dakota, later in Wisconsin, and finally in California where the emphasis was on chicken ranching.

Harper admits to having chosen forestry as his academic major field quite by chance. He went with a friend, Ralph Follett, to the latter's freshman interview and was so favorably impressed by what the student counselor had to say that he was sold on entering the University of California School of Forestry. The convincing counselor was Donald Bruce, then a professor of forestry and later one of the partners of the world famous consulting firm, Mason, Bruce, and Girard of Portland, Oregon.

Following his obtaining the bachelor's degree in 1926, Harper opted to continue his studies and earned the master's degree in 1927. This led to his first professional assignment in the same year as a research assistant in the United States Forest Service's Southern Forest Experiment Station. The head of naval stores research of the station, Lenthall Wyman, put Harper to work, and for the next eight years his energies were focused upon problems of the naval stores industry in the South. In 1931 he was

put in charge of the Lake City Florida Research Center, where he served with distinction until transferred in 1935 to the post of chief of Forest Management and Forest Influences at the Southern Forest Experiment Station at New Orleans.

Harper was now gaining national recognition for his work, and in 1937, concurrently with the publication of a work he jointly authored with Wyman, he was called to the Washington Office of the Forest Service and made assistant chief of the Division of Silvics, which was changed to Division of Forest Management Research in 1939.* It was during this period of his career that Harper authored a part of Forest Outings : by Thirty Foresters, which was edited by Russell Lord and published by the Forest Service in 1940.** The work came out of a prolonged conference and work session on national forest recreation policy and practice in which Harper had been assigned the subject of forest recreation research. This was probably the first recognition by the Forest Service that recreation use of national forest land might be in need of organized research attention.

World War II brought a host of new problems to the Forest Service, and in 1943 Harper was made chief of the Division of Forest Economics in the Chief Forester's Office. In 1945 he was made director of the Northeastern Forest Experiment Station. Much of the first two years in this appointment was spent on detail to the Chief's Office as a project leader under Assistant Chief Raymond Marsh for the Reappraisal of the Forest Situation in the United States.

In 1943 Harper gained his doctorate at Duke University's School of Forestry. He was later honored by North Carolina State University, which awarded him the degree of Doctor of Science, honoris causa, in 1967.

In 1951 Harper returned to Washington, D.C., where he was deputy chief for Research of the Forest Service until his retirement in 1966. In this key position, Harper coordinated all research activities of the Forest Service. He supervised six divisions in the Washington Office; the

*U.S., Department of Agriculture, Forest Service, Variation in Naval Stores Yields Associated with Specific Days Between Chippings, by V.L. Harper and Lenthall Wyman. Technical Bulletin No. 510, (Washington, D.C.: Government Printing Office, 1937).

** _____, Forest Outings: by Thirty Foresters, Russell Lord, ed. (Washington, D.C.: Government Printing Office, 1940.)

Forest Products Laboratory at Madison, Wisconsin; the Institute of Tropical Forestry at Rio Piedras, Puerto Rico; ten regional experiment stations, including their eighty laboratory locations and more than a hundred experimental forests and ranges; and a program of Forest Service research grants to both foreign and domestic universities. Few men in the history of the Forest Service served longer stints in high position than did Dr. Harper. His tour of fifteen years in his final post is one of the longer on record.

Dr. Harper served as a member of the United States delegation to the United Nations Food and Agricultural Organization in 1951, 1953, 1957, 1959, and 1965. From 1958 to 1961 he was chairman of the Latin American Forestry Research Committee. He was chairman of the United States Executive Committee for the Fifth World Forestry Congress, which was held in 1960 at Seattle, Washington. From 1956 to 1962 he was a member of the governing board of the International Union of Forestry Research Organizations and served as its vice-president from 1962 to 1968. In 1966 he was a founder and the first president of the International Union of Societies of Foresters, a position in which he continues to serve at the present time.

Dr. Harper received the Distinguished Service Award of the United States Department of Agriculture in 1961 and the Fernow Award for distinguished service to international forestry in 1963, the latter granted jointly by the American Forestry Association and the German Forestry Society. He was elected to the Cosmos Club of Washington, D.C., in 1946; as Fellow of the Society of American Foresters in 1955; and, during his student years, to the honorary societies of Sigma Xi, Phi Sigma, Xi Sigma Pi, and Alpha Zeta. He is a member of the Forest History Society, the American Forestry Association, the Audubon Society, and the Wilderness Society.

The tapes from this interview were transcribed by Barbara D. Holman. Dr. Susan R. Schrepfer edited the manuscript and sent it to Dr. Harper, who revised it extensively. Copies of the interview, either in manuscript or microfiche form, can be purchased from the Forest History Society. Use of the transcript is governed by the copyright laws and a signed contract between the Forest History Society and Verne L. Harper.

Elwood R. Maunder
September 5, 1972

Elwood R. Maunder was graduated from the University of Minnesota in 1939 with a B.A. in journalism. He was a reporter and editor of the Minnesota Daily and an officer of his class. From 1939 to December 1941 he was a reporter and feature writer for the Minneapolis Times-Tribune and the Minneapolis Star-Journal. He enlisted in the U.S. Coast Guard December 21, 1941, and served as a combat correspondent in both the European and Mediterranean theaters of war on landing craft for infantry and combat transports. He was editor of the Ninth Naval District's magazine, Soundings, at the conclusion of the war. He was graduated from Washington University at St. Louis in 1947 with an M.A. in history. He attended the London School of Economics and Political Science for one year and worked as a freelance foreign correspondent and British Gallup Pollster. He was a member of the staff of the U.S. Department of State during the Meeting of Foreign Ministers in London in 1947 and 1948. Returning to the United States he was named director of Public Relations for the Board of Missions of the Methodist Church, later director of public relations for the Ohio area of the Methodist Church. In 1952 he was appointed executive director of the Forest History Society. He is the author of many articles, has produced more than one hundred oral history interviews, and edited with Margaret G. Davidson A History of the Forest Products Industries: Proceedings of the First National Colloquium, sponsored by the Forest History Society and the Business History Group of the Harvard Graduate School of Business Administration. He is the publisher and long-time editor of Forest History, quarterly journal of the Forest History Society. He is an Honorary Member of the Society of American Foresters and a Fellow of the Forest History Society.

BACKGROUND AND EDUCATION

Early Years

Elwood R. Maunder: This is Elwood Maunder speaking from the home of Verne L. Harper in Gainesville, Florida. It is Wednesday, January 12, 1972. I am about to interview Dr. Harper relative to his career in forestry and the history of multiple use in the Forest Service. Dr. Harper, I am going to ask you, first of all, to give us some personal history, where you were born and a bit about your family origins.

Verne L. Harper: I was born in Monroe, South Dakota, and moved with the family to Wisconsin when I was about ten years old and then from Wisconsin out to California when I was about fifteen. I had most of my schooling through college education and master's degree in California.

ERM: What was your father's work?

VLH: He was a farmer. At one time he owned and operated a hardware store. I was too young to remember much about it. My first recollection was when we lived on a big farm in South Dakota later, and he farmed in Wisconsin. Then after we moved to California he ran a chicken ranch. So my background has been agricultural.

Forestry Education of the 1920s

ERM: What turned your attention towards forestry?

VLH: I think you could say it was by accident. I recall that I was on the campus of the University of California, had registered, and wasn't at all sure of what I wanted to major in. A friend of mine said, "Why don't you come with me over to the forestry school? I'm going to take forestry." I replied, "I have nothing to do especially

today; I'll go along with you." I listened to a very convincing sales talk by Don Bruce. He was a member of the faculty at the forestry school, and he was the counselor to whom we had been sent when we came to the general office of the forestry school.

ERM: Who was this friend of yours?

VLH: His name was Ralph Follett. After he graduated he became an engineer rather than a forester. I heard of him when he was a county engineer, I believe, for some county in Oregon.

ERM: That was an interesting introduction to your profession.

VLH: For a long time, you know, I wouldn't reveal the lack of a planned entry. I remember Professor [Walter] Mulford asked me, as he had most of his students, "Why did you come to the University of California, and why did you decide to take forestry?" I hedged until one day I decided to tell him the whole truth, and he merely laughed and said that's the way lots of students get into whatever they major in.

ERM: What year did you begin school?

VLH: In 1922.

ERM: Who were the professors who most influenced you?

VLH: I would say, probably, Walter Mulford, who was head of the school, even though I didn't have many formal courses under him. He had quite an influence, I would say, on all the students. And then [A. W.] Sampson in range; [Emanuel] Fritz in forest utilization; [Woodbridge] Metcalf in dendrology and silviculture. And along came [Myron] Kreuger who took Don Bruce's place and taught forest management among other subjects. This was a small student body, a closely knit society. Students got to know the faculty very well, intimately, both in and out of class. They had quite an influence on all of us.

ERM: How would you characterize Mulford's personality?

VLH: I think I can illustrate that, and it also illustrates my introduction into what might be called multiple use. I remember Professor Mulford telling us in our forest policy course--which he taught more like history than most of us do nowadays--in speaking of the California forests, that despite the fact that most of our courses

were organized around the commodity uses, namely timber and range, the chief importance of the California forests are for protection of watersheds. He said the time will come when the pressure will be great for outdoor recreation. Mind you, this was in 1923 and 1924. It is something I always remembered, and it is something that I feel has come to be appreciated, particularly in California.

ERM: In other words, you think he was somewhat ahead of his time in his analysis.

VLH: Yes, probably considerably ahead of his time in thinking about the future significance of the forestry profession, its character, its scope, and of the products and services that one can get from the forest.

ERM: Do you consider him one of the pioneers of thought in this country along multiple-use lines?

VLH: I don't know as I would characterize it as being particularly along multiple-use lines. But I would place him among our top leaders in the natural resource education field. I place him along with Henry Graves, Filibert Roth, and perhaps others such as Sam Dana, who came along a little later. They were all great leaders, I have always thought. I think they stand out sharply in comparison with the leaders we have in the education field today. We were fortunate in those early days to have men of their stature and vision. How they got into forestry, you probably know more about than I, but I saw them more or less as idealists.

ERM: They were crusaders.

VLH: Yes.

Trends in Forestry Education to the Present

ERM: Do you think that has gone out of the field to a very considerable extent now?

VLH: I'd say definitely, yes. I would say we lost that when we lost the first generation of school leaders. The men who succeeded them,

in my view, are the main ones who helped get the profession in the trouble that it is in now, by staying oriented too long towards the commodities, only belatedly getting into areas of the cultural benefits that one derives from forests, and incorporating these extra market values into their school programs. This may be harsh judgment, but, nevertheless, that's my conviction. Maybe this comes under the category of a part that I just as soon wouldn't release, at least not too soon.

ERM: Where do you think we got off the track from the original thrust of forestry? Define the more narrow concept that you say got us in trouble.

VLH: I would say that we probably got off the track during the fight over regulation. Now, there were some benefits that came out of that fight, but there are also some costs to it. One of the costs was a division in the profession itself over the issue of regulation. Many of the second generation deans of the forestry schools were pretty solidly against regulation, and they tended to align themselves with the timber interests. And in the normal seeking of financial support wherever they could get it, they were trapped, anxious to do those things that were pleasing to their benefactors. Unfortunately, at that time the federal government wasn't helping to support the forestry schools.

I might say, this is one of the reasons later on that I, as chief of Research in the Forest Service, decided that we needed a new policy, a federal-state cooperative research policy. We needed enabling legislation for this so that the forestry schools could get federal seed money toward bolstering their research. This would help them reach a more balanced program of nonmarket versus market resource values. There was an imbalance, an orientation or bias toward timber management in their teaching as well as research and toward industry employment for students.

The forest industries, you will recall, became interested in permanent forest land holdings for continuous timber production about the time of World War II, that is, in the mid 1940s. They aggressively began an expansion of holdings, especially in the South. They needed foresters and accordingly cultivated the forestry schools--providing scholarships, funds for research projects, and, of course, offering employment opportunities for the graduating students of the southern schools. Because of all this the forestry schools of the South became strongly influenced by private forestry interests.

I was aware of the pro-industry slant in many of the schools-- and this was not confined to the South--but I hadn't realized its full meaning until after I came back to the South to teach and had the opportunity to observe more closely the southern schools. The school here in the University of Florida, where I teach, is probably less slanted toward industry needs and employment than most of the others; Florida is less like the South than other southern states. But there has been a heavy emphasis even here on turning out students for industrial forestry, which has been reflected in curricula and teaching attitudes.

Under these circumstances a certain degree of prejudice, here as well as elsewhere in the South, against public employment, particularly federal, is understandable. I got the distinct impression when I first arrived that public employment was seen as demeaning. There is much less of this attitude at the moment because we are in a period of tight job market.

ERM: In other words, if you couldn't get a job in private industry, you'd have to take second best.

VLH: Yes, that's right. The students were reflecting, I suppose, both what and how they had been taught.

ERM: Were some of these people who established this pattern of bias against the government also people who had been involved in the government forestry at some time in their careers?

VLH: No, not entirely, although some of them had work experience in federal agencies and may have been soured because of it. But I would say no that wasn't the reason. I think it stems from close relations with industry and hence an exposure to industry's traditional opposition to the Forest Service, plus, of course, a desire to cater to industry as the main customer. Some of it, no doubt, was due to their ignorance about the policies and programs of the public agencies, particularly those of the federal agencies. The bias against it wasn't confined to the Forest Service. It was away from the other federal agencies also mentioned--the Park Service, the Fish and Wildlife Service, etc. Perhaps because of its size and stature there seemed to be the greatest fun in shooting down the Forest Service. I don't mind them having fun, but when they infect students with their prejudice, the matter becomes serious.

ERM: One of your old professors was so bitterly against the Forest Service that I'm sure it had a long-term effect on the very type of thing that he taught.

VLH: I'm not so sure of that. I will say this in support of Emanuel Fritz, who is the man you are talking about; he did not allow his anti-Forest Service feeling to carry over into his actual instruction; perhaps so in his conversations.

ERM: But not in his teaching?

VLH: Not in his teaching, no. He did a better job of objective teaching than some of our contemporary professors. Some of them are biased and find it hard to conceal their slant in the classroom. Maybe it is because these are days of free speech, academic freedom, and activism on campuses.

ERM: It is also a time of sharp prejudice.

VLH: Yes. And I'll say this, too. Students on campuses nowadays love nothing better than to hear somebody or something being panned. And if you don't destructively criticize, if you try to do a balanced job, you're considered a kind of old fogey. They flock to those who are the most violently opposed to something or somebody. The more ripsnorting the lectures are about this or that being bad, the greater the student audience. This is why I think the environmental concern is getting student interest today. Much of the criticism, expressed or implied, is against the establishment, against the institutional systems as they exist today. And God knows we need to make changes all right, but the commentary is that this attitude of being against is what the students love. And they are more interested in that than they are in constructive things. Maybe this is just part of the age in which we live. I won't say this is always true about students. There are many notable exceptions. But, in general, one finds more students today seeking and promoting "aginism" than formerly.

ERM: I think that's true. I think there is a great interest in the dramatic speaker, the doomsday prophet, the person who is projecting a lot of statistics, some of them perhaps rather questionable but which foresee the grimmest future. All of this, of course, can be turned around and blamed on the establishment and the older generation who have created the conditions bringing all this trouble down upon us.

Entering Forest Research

Well, you went to the University of California from 1922 to 1927.

VLH: Yes, I got a master's degree there.

ERM: At what point in your career as a student did you decide you were going to go on beyond the undergraduate degree and make a different kind of career for yourself in the field?

VLH: Well, that came later. Actually, that came after I had been out about ten years and was in Washington at the time. This was before the beginning of World War II. It seemed a time when I could get away, and it was a good time because I had the kind of responsibilities then that I could get away from, but it might not be feasible to get leave of absence if I delayed much longer. So I chose then to go back to school for a Ph. D., and I chose Duke University. I was at Duke at the time war broke out, finishing up my academic requirements.

ERM: When you were doing your undergraduate work and master's work at California, did you have any particular employment goal in mind?

VLH: No, I had not set a particular goal of where I wanted to work or what I wanted to work at. I worked for a lumber company the first summer between terms. I liked that. I worked one summer for the federal Blister Rust Control and thought that was pretty nice work. I was willing to accept most anything that might come along and, again, in similar fashion to entry into forestry schooling, I got a job by pure accident. Which is to say, my first permanent job in research was not planned. It came in an unexpected way.

ERM: After you had your master's degree?

VLH: Yes. It came about this way. There were very few jobs being offered in 1926 and 1927. One reason that I went on to a master's at that time was because there weren't any jobs. I could, however, get an assistantship, which I took and continued my education. Well, in 1927 there was one job being offered by the U.S. Forest Service. At least one that I know about; there might have been others.

Ed Kotok, who was then director of the California station, which had been newly organized about a year or two before, was given the job of interviewing and recommending a candidate from the school of forestry at Berkeley for this job. Kotok called me to his office one day to tell me about it. I didn't know Ed Kotok then, but in what I later came to know as his characteristic manner he was pacing up and down the floor spilling tobacco in a trail. I subsequently learned that this was his habit when troubled and he had to make up his mind about something.

He told me in effect, "We have a job offer from the Forest Service in research in the South, and I have been given the responsibility of making a recommendation to the chief of the Forest Service. I have two candidates in mind after talking to the faculty. One of them is Vic Clements; the other is Les Harper. I have talked to Vic Clements and now I am talking to you."

After we had talked for awhile he made his decision. He said, "Well, I am convinced that you're not research material, and I believe the faculty here agrees with me on this. Your bent is for action programs. You ought to try to get a job as district ranger, because you have been a president of the forestry club, a member of the student council, and interested generally in organizing actions." I suppose I was classed somewhat as an activist in a mild sort of way. We didn't have that term then, nor big issues. Whereas, Vic Clements was quiet, somewhat of a loner, and quite studious. Also, he was interested in mensuration and statistical methods, qualifications then in demand. But, low and behold, it turned out that Clements was Canadian and therefore not eligible.

Then it came down to me, and so I got the job anyhow. The interesting part of it is that I succeeded Ed Kotok as chief of Research of the U.S. Forest Service. I reminded him of this early incident. You can have lots of fun with Ed, you know. His reaction was a wry face and the retort, "I don't remember a thing about it."

Public Regulation of Private Forestry, 1920s

ERM: In school during those middle twenties you were an observer and probably a discussant on many matters of high importance to forestry. There was the whole struggle over regulation.

- VLH: Yes, it was beginning then. I believe it started around 1919.
- ERM: The debate within the fraternity of foresters over whether it would support the Snell Bill or the Capper bills? These were the bills that were up, and wasn't it the Clarke-McNary Bill that came out? **
- VLH: That's right. It was a compromise or alternative to regulation.
- ERM: In 1928 came the McSweeney-McNary Act, which was the thing that really put a solid floor under research. *** Do you remember debates within the ranks of forestry students and faculty leading up to these acts?
- VLH: I don't recall debate on such matters. If there was discussion amongst the students, I don't recall it, and I am sure I would have had there been. I don't recall the faculty making much point over it. Undoubtedly it was mentioned, but this was not a live issue. Nor did I hear very much about it in the Forest Service until I got to Washington, D.C., about 1937.
- ERM: I wonder why that was. I would imagine that if there was any major legislation pending in Congress at the present, it would be discussed among faculty and students of forestry schools today, would it not?
- VLH: If it were major legislation that seemed to have a serious chance of passing, that might be true, but I don't believe that the kind of legislation proposed with regard to federal controls at that time was regarded very seriously by the political scholars. I think I could say that it didn't have much chance. I'm not sure that anyone, in view of our country's heavy commitment then to respect for private property rights, should have thought it had much chance. You get lots of bills introduced that don't have much chance of passing. I'm inclined to think that the federal end of legislation itself didn't create much of a ripple insofar as it concerned the profession.

*U.S., Congress, House, H.R. 15327, 66th Cong., 2d sess., 1921. (Also known as the Snell Bill). Three separate Capper bills were introduced in 1920, 1921, and 1924, but no hearings were ever held.

**Clarke-McNary Act of 7 June 1924, ch. 348, 34 Stat. 653, 16 U.S.C. secs. 471-570 (1964).

*** Reforestation and Forest Products Act of 22 May 1928, ch. 678, 45 Stat. 699, 16 U.S.C. secs. 581-581i (1964). Also known as the McSweeney-McNary Act.

What did seem to matter more was what a few leaders in one part of the profession were saying, that part that was employed publicly, and what a few leaders from another part were saying, that part that was employed privately. In the beginning, the balance in number of employed professionals was on the side of the public. Until after World War II there were few private foresters.

So, it seems to me that the controversy within the Society of American Foresters that was being waged on philosophical or ideological grounds among a relatively few leaders had little reference to specific federally proposed bills. Proponents and opponents of regulation of private forests badly divided the society and left it gun-shy for years in regard to controversial issues.

As I recall the discussion at that time, there was a big question as to whether federal controls were constitutionally proper, whether the federal government would be justified in getting into an area that was considered to be the states' responsibility.

It hadn't been long since forest conservationists had struggled with this same question of possible federal invasion of the states' responsibility in regard to the purchase of national forest land in the East. For many years there was strong resistance to federal purchase of land for national forest purposes for fear it would be successfully challenged on the grounds of an inadequate showing of federal responsibility. Initially, the Weeks Act of 1911 authorized a very cautious approach to federal acquisition. Purchase was limited to land located on the headwaters of navigable streams. The rationale for federal involvement was that navigable streams for transport of logs and other goods were interstate in character and that forest land situated in the headwaters area of such streams deserved special protection. In spite of its dubious justification, the land-purchase provision of the Weeks Act was not challenged. By 1924 the proponents of land acquisition for national forest purposes obtained a broadened legislative authorization. Under the provisions of the Clarke-McNary Act of 1924, federal purchase of land located anywhere on the watersheds of navigable streams was possible. Moreover, the national forest land acquired was to be for timber as well as streamflow protection. Most of the national forests in the coastal plain of the South were acquired under this broadened authority.

Most students of public regulation of management practices on private land recognized that there was a serious question involving justification for direct federal intervention. The belief appeared to be fairly general during the 1930s and 1940s that there was serious risk that a federal law would be knocked down if a bill were to pass. Currently, under the influence of the environmental movement, I would expect less resistance to such a federal law purely on the grounds of state versus federal responsibility.

- ERM: The initial crusade of Pinchot, which launched the profession in this country, ran into difficulty with Pinchot's exit as chief of the Forest Service. But it also lost a lot of its steam, it seems to me, because of World War I, which took public interest away from conservation for several years. Then when attempts were made to revive it after the war, there wasn't the same passionate feeling about it. Maybe some of the leaders had lost their drive. You were contemporary with those events. Do you have any notions about how they imposed themselves on the character of forestry and general development of forest policy?
- VLH: You are speaking now of the leaders of the forestry profession as in the Forest Service especially, are you?
- ERM: Right. But not just in the Forest Service. Some of them were in state forestry.
- VLH: Yes. I would say that there were a number of them around that had the same crusading spirit and would have been just as effective but the issues that they were pushing at that time were far less glamorous and some were pretty unpopular. For example, any time that you start interfering with the rights of a private owner to handle his property as he wishes, you're fooling around with something that's pretty distasteful to a lot of people on matter of principle. It's repugnant to them.

We must remember that people came to this country from Europe with a rather bad experience or history with individual rights, and they certainly weren't going to lose them over here without a struggle. The rights of property ownership, the whole custom and law that had grown up in protection of property rights which had vested considerable authority in the owner to do as he pleased with his property, were something cherished by the majority of people. Therefore, I think it was the regulation issue itself which they were pushing that doomed the movement to failure, rather than a weak crusading spirit of the leaders in the profession.

Although the fight to compel the private owner of forest land to improve his cutting practices toward regeneration of the forest was not won with federal legislation, there were other substantial achievements in the period immediately following the First World War. To mention only two, there were the Clarke-McNary Act of 1924 and the McSweeney-McNary Act of 1928. Both the initiation of these laws and their implementation reflect great credit to the leadership qualities of the forestry leaders.

The campaigns to win these other achievements can scarcely be called crusades, however. The issues involved were not particularly emotional, and it is doubtful whether they attracted wide attention.

I suppose we could label with the term, *crusade*, any movement pursued zealously and which is highly charged with emotion. Most of our conservation movements that fall in this class have related to land ownership or the property rights therein. These are the ones that have the most controversial issues and which are apt to attract the largest attention of supporters and opposers. The issues involve business benefits versus public costs, private property rights versus public individual rights; and the issues usually generate a flood of propaganda, both written and spoken. It takes passionate feeling and zealous attack to get a major policy change to increase public ownership or to curtail private property rights against the opposition of the private enterprise system. And the likelihood of winning is roughly correlated with how outraged the public will become over the abuses being inflicted on it.

It is understandable that the public got worked up over the prevalent and long-practiced abuses of the public land disposal laws during the 1800s and that the crusade to create the forest reserves, which later became the national forests, was successful. Likewise, it is understandable that the public got less excited over the failure of private forest owners to assure an adequate, national supply of timber, a remote and ambiguous goal, and that the crusade to compel good private forestry through federal legislation accordingly failed. If regulation of timber cutting practices on private land comes to pass it is apt to happen because of environmental abuses rather than because of a short fall in timber supply.

RESEARCHER, SOUTHERN FOREST EXPERIMENT STATION, 1927 to 1937

Naval Stores Research

ERM: You first went to work for the Forest Service at the Southern Forest Experiment Station in 1927. Weren't you initially involved in naval stores research?

VLH: Yes. The first project I was assigned to was then under Lenthall Wyman, who headed up naval stores research at that time. The purpose of the project was to devise improved turpentine practices that would result in higher gum yield and do less damage to the timber. Naval stores products are timber products. They are known in the trade as gum turpentine and rosin. They are manufactured from oleoresin, often called gum, which in turn comes from live trees that are periodically wounded. The wounding prevalent at that time was weekly chipping with a hack. The chipping was very destructive to second-growth timber. Well, we solved that problem largely by decreasing the depth and height of chipping. In other words, the less punishment to a tree through scarring it in order to get the gum to flow, the less damage to its welfare as a living plant.

ERM: How far was that, four or five inches gap between the scars?

VLH: No. Within a given face the chipping streaks were continuous, progressing up the tree by chipping once a week. Each streak was one half inch deep and a half inch high. Much additional naval stores research has been done since I left the project in 1934. Now the recommended practice is to chip about once a month with just a delicate scar on which acid is dabbed to prolong the injury that induces the resin ducts to produce oleoresin. The turpentine streak will flow for maybe two to four weeks. Then you put another streak, or scar on the tree, and you end up with very little physical damage to the tree and a higher yield than formerly.

ERM: Now this is one face. Sometimes there is a face on the other side. Is there a limit to how much space is desirable between these two?

VLH: There is a limit. You need a life bar between them, that is, a live

cambium between them so that the tree will get sufficient moisture from the roots and the products of photosynthesis from the leaves can get down to the roots. As long as you leave a two-to four-inch bar between faces, you're perfectly safe.

ERM: How many years did you spend in the naval stores field?

VLH: Well, I'd say I probably never got out of it completely while I was in the Forest Service, but my years of active research in it were about eight.

ERM: From 1927 to 1935.

VLH: Right.

ERM: Is the turpentine industry compatible with other uses of the forest? The lumbering use, of course, is one. But are there other uses that turpentine lands could be put to?

VLH: Yes. I think one achievement that we accomplished in research is that we made lumbering and turpentineing compatible. There was a time if you dedicated trees to turpentineing, why that was just about it so far as any other use of the timber was concerned. With the kind of annual burning that you had to do to protect the turpentineed trees, about all else you could get out of the land area would be hunting and grazing. With the new practices we developed we found that you get much better hunting, much better wildlife habitat, out of another kind of burning, not annual burning, but periodic burning. You got even better grazing by periodic burning and not necessarily annual burning. Certainly we harmonized the naval stores chipping techniques with the biological requirements of the tree to the point that they are not nearly as destructive as they used to be. There is nothing intrinsic in the naval stores business that would interfere with one going ahead with almost any other use of forest lands besides naval stores, but, at the same time, I must say that naval stores appears to be a dying, a gradually declining industry.

ERM: Because substitute materials have taken the place of wood?

VLH: Yes. The markets are shot. We have learned how to breed trees to increase the oleoresin yield as much as three and four times of what we used to get on the average. We've learned how to chip at much reduced cost over what we used to do. We've learned how to do very little harm to the growth of the timber. In spite of all of

these improvements and their cost advantages, the naval stores industry still hasn't enough of an edge that it can compete in the markets with substitutes. The rising cost of labor and the difficulty of getting labor for naval stores work--looked upon as demeaning--is also a factor. There is continuing research going on on the part of the Agricultural Research Service trying to find new uses for rosin and for turpentine. This kind of research has been going on for a long time, but it's a difficult field. Another factor that has come is that much of the rosin, especially that the trade needs now, is derived from a by-product of pulp and paper making. It's called tall oil. It's a by-product of pulping resinous wood. It has to be taken off and further processed. It used to be thrown away with the effluent. It had no real use. But now it is produced in great volume in southern pine pulp mills. Research, mostly by the industry itself, has shown that tall oil can be salvaged at a profit. It is sold at a cheap price, and this rosin is used for many of the same purposes as gum naval stores rosin. So as a competitor of gum naval stores rosin, it's got the edge.

ERM: And it can be extracted in far greater quantity.

VLH: Oh, yes. The big pulp mills are now extracting barrels and barrels of it for the market. And the source of it continues to expand with an increasing number of pulp mills and more efficient salvage of by-products.

Austin Cary and Eloise Gary*

ERM: Did you know Austin Cary during this time?

VLH: Very well indeed. Austin Cary had an office in the wintertime with us in Florida when I first joined the Forest Service; that was in 1927. In 1931 I moved to Lake City to conduct investigations on a new experimental forest and to broaden our work to include research in silviculture, use of fire as a management tool, and so on. He

*See also, Frank Heyward, "The Forest Management Advocate: Frank Heyward Speaks of Austin Cary's Forestry Crusade in the South," typed transcript of tape-recorded interview by Roy R. White, Forest History Society (Santa Cruz, California, 1971).

moved also and continued his office space with us. He had no official connection with our office though we gave him office space and he had the use of our facilities when he needed them. We had the benefit of his consultation on problems.

ERM: He had kind of a free road.

VLH: Yes, he was a free agent. I don't think that he felt responsible to anybody. The Forest Service had confidence in him; he didn't like to have constraints put on him. He was an eccentric man. And a good bit of his value was due to the history that developed around him because of his eccentricity. For one thing, he was very forgetful. He could wear the mantle of professor very well; I guess he was a professor at one time. Let me illustrate his poor memory for names. He sat in an office with Frank Heyward during the early 1930s, and I don't know how many times during the week he would come to my office and ask, "What's that man's name that shares office space with me?" The stories about Doc Cary's eccentric behavior appeared to enhance his public image. I would say, however, that his main characteristic was his emphasis on common sense. He was very pro-industry in his forestry thinking.

ERM: He knew how to get ahold of the old lumbermen, didn't he?

VLH: Right. And he knew how to appeal to their business sense. A kind of forestry that made money was his forte, and this certainly had appeal to practical lumbermen.

ERM: He was a Schenckian in that sense.

VLH: Yes. That was the only kind of forestry worth talking about as far as he was concerned. He wouldn't have gone for recreation at all. He was a New Englander who I imagine would think immoral a practice of spending time, any of your time, unproductively. Another characteristic of Austin Cary was that he'd come to visit with you and probably fall asleep sitting in a living room chair. You sat there calmly while he snored until he awoke and shook himself. He would rise and say, "Well, it's very nice to have a visit with you, I'll be going now. And there hadn't been ten words spoken. But we all liked him.

ERM: And he was accompanied a good deal by Dr. Eloise Gary.

VLH: Eloise Gary did microscopical and other basic research work in naval stores research, and she and Doc Cary did travel together to many

of the same meetings. We used to hear various incidents about that, which added to Cary's growing reputation. They went to a hotel in one of the small towns in Georgia. The proprietor liked to tell the story about that first time he laid eyes on Eloise Gary and Austin Cary.

Austin Cary and Eloise Gary both signed the register, but the clerk gave a key to but one room. He didn't detect a difference in their names; Cary or Gary sounded the same to him. Eloise Gary protested. She said, "But I want my own room. I am Miss Eloise Gary." And he looked at her hard, "But you're traveling with him, aren't you?" When she replied, "Yes," the clerk retorted, "Well then, you ought to be married." Austin Cary didn't crack a smile through all of this. He stood looking on with a blank stare, probably thinking of something far away. Eloise Gary liked to tell that particular story, also.

She was a fine woman and a great scientist. She was with us a great deal in those days, working in a makeshift laboratory and carrying out field work with us. I must say that a good bit of my education in the naval stores field came from her. She had at that time a better basic training than any other one in naval stores research.

ERM: I visited with her briefly before she passed away. She was a charming lady. She had several rather unusual dogs that she had imported from Australia. She was particularly fond and proud of them.

Charles H. Herty

Well, then you must have known Dr. Herty.

VLH: Oh, yes, I knew Dr. Herty. He did the initial research in naval stores as an agent of the Forest Service. He devised a system of getting away from the old cut box at the base of a pine tree in which you collected the gum from the weekly chippings for naval stores. A cup was named after him--it is still being used to some extent--the Herty clay cup. It is hung on the tree right below galvanized-iron gutters that direct the gum into the cup. His cup and gutter

system of turpentine enabled the naval stores industry to make the transition from virgin timber to second-growth trees. A cup and gutters could be used on a relatively small tree whereas a box made by axe at the base of a tree required a fairly large tree.

ERM: People in forest research have had a very profound impact upon the economy of the South.

VLH: You're speaking of Herty, in particular, and Cary. Well, yes. I would say as contributions go, during their time their's were major ones. But I wouldn't say that they were the greatest contributors to what revolutionized resource use in the South. Herty's work on making paper from southern pines could have played a promotional role, but the compelling factor that brought capital South was not the technology of making paper. The thing that brought them down here was being assured of a continuing resource by the national Forest Survey. This was undoubtedly the most powerful influence pulling the industry to the southern pineries. It convinced everybody that a whale of a lot of wood was available here right now, in the early 1930s, and it convinced them that the South could grow wood at a faster rate than most any other region.

Inman F. Eldredge*

ERM: That brings up the name of another great old raconteur and friend of mine and, I am sure, of yours, Cap Eldredge.

VLH: Oh, yes. I would say he probably had far more influence than Herty on what happened in the South. He ran the Forest Survey in the South, and he probably was drawn into the inner councils of industry many times in trying to pinpoint where wood resources were and the extent of them. All of us got involved in peddling the results of the survey at the time. I recall I was visited by a group of businessmen from Jacksonville when I was stationed at Lake City. They were wondering whether they should promote a

*See also, Inman F. Eldredge, typed transcript of tape-recorded interview by Elwood R. Maunder, Forest History Society (Santa Cruz, California, 1959).

pulp mill in Jacksonville. Would the timber resource be available? We were all supplied with the latest Forest Survey releases, so I handed them out and assured my visitors that there was an awful lot of worked-out naval stores timber that wasn't being used, but which ought to be used.

It developed that one of their main concerns was air pollution. Had they known then what they know now, they probably would have dropped their project. Water pollution was involved, too, in their concern, although that didn't seem to bother them as much as the stink from the pulp mill. They asked me to speak to the Jacksonville Chamber of Commerce, which I did. At that meeting they agreed to go ahead on the basis of the assurance that I gave them that the wood raw material supply was ample. I was merely echoing what Cap Eldredge had been saying about the Forest Survey results.

ERM: I never heard a man who could tell stories the way he could. My oral history interview with him required very little editing. It flowed out of the man like a river.

VLH: He used to tell me and others at the southern station, "You know, when I have to give a speech, it worries me to death." Of course, I think he was trying to set us at ease. We were young and were nervous about public speaking. We knew he did it so well, and we were asking for his counsel. "How do you do it Cap?" "Well, practice," he replied.

ERM: He was a rare man.

VLH: I think he had more influence on professional foresters and on forest industries in the South than any other man. And he came along at the right time, too. He was in his prime during the period when forestry was ready to move. He came to Fargo, Georgia, in 1927, the same year that I began at Starke, Florida. We used to see him frequently. His job at Fargo was to put a large acreage of privately-owned land under management, and he experienced all the problems the landowner then had to face. It was a natural development that he return in about 1932 to the Forest Service as the head of its southern division of the newly authorized national Forest Survey. He had an excellent background for the assignment. Moreover, he was known widely throughout the South.

Forest Service Advisory Committees

ERM: You must have known Joe McCaffrey.

VLH: Yes, Joe McCaffrey was one of the members of our Advisory Committee on Research. McCaffrey was one of the great leaders in the South. He wasn't the Cap Eldredge type, but professionally he was far out on the end of the many managers of industry.

ERM: I had that same impression in my interview with him. He was a long country mile ahead of other industrial people, including those in his own company. He is a very plain-spoken man. He doesn't hedge on what he believes. One of the things--I think I'm right in my recollections here--he said to me in the course of an interview was, "One of the greatest privileges of my life was to sit on the Advisory Research Committee. This put me up against a variety of men from around the country and from different walks of life, different positions, who sat down periodically in different places and really picked the bones of forestry hard, really grappled with the gutty problems. I learned more out of that committee than anything else I ever did."*

VLH: I've heard a number of others say that, including the assistant secretary of agriculture. Much to my dismay, though, after I left the Forest Service these advisory committees were completely abolished.

ERM: Why do you suppose they were?

VLH: I think it was the feeling that the will of the departments was being thwarted with too much influence. They had their policies, and administration had policies, and the secretaries of the departments were committed to carry these out.

ERM: These advisory committees would take pot shots at some of their policies.

VLH: And also advised them to get into things that didn't fit in with their policies. Therefore, they thought, what's the use of having such advice, we're not going to use it anyhow.

*J. E. McCaffrey: "Go South, Young Man," typed transcript of tape-recorded interview in 1965 by Elwood R. Maunder, Forest History Society, Santa Cruz, California. In process.

ERM: But that's the growing edge isn't it, really? That's like reading poetry to find out what's coming in the future because the poet, like the artist, is ahead of his time and reflects a good deal of what is coming.

VLH: Yes, I heard a dean of a forestry school say--he had been quite critical of things going on in the Forest Service--after he had attended one or two of these, "You know, I have learned more since I have been here about the Forest Service and its problems, and I must say my respect has increased for what you fellows are doing." He also mentioned that he was glad of this opportunity to cross swords and rub elbows with many of these other people, many picked deliberately with different interests and backgrounds.

As I say, the assistant secretary got up in a public speech after the first one he attended and said, "I just came back from attending the Forest Research Advisory Committee, and I have had a liberal education in the forestry field. I feel confident now to talk to you about it." He told me, too, "Why this is the best day I ever spent." Yet he was the same person who was party to, I guess, getting rid of them, not only ours, but all of them. I must say that the Department of Agriculture had a whole slew of research groups and some of them may have been of very little value to the department. Some of them represented rather narrow interests. For example, peanuts research had its own advisory committee, and other commodities had their separate committees. This was costing the department probably several hundred thousand dollars. The easy way out was to abolish all of them, even though some, such as the forestry one, had proven their worth.

Forest Service Contributions to Southern Economy

ERM: To what extent do you believe that forestry and particularly the U.S. Forest Service lent aid to the economic prosperity of the South during the 1920s and the 1930s? We have earlier mentioned the Forest Survey, a Forest Service program that stirred up the great interest of pulp and paper people to come to the South. Were there other

inputs on the part of forestry and the Forest Service of earlier dates, in the twenties and thirties ?

VLH: Yes, I would say that the research done by the Forest Service in the South beginning in the early twenties laid a beginning basis for the kind of practice that people could apply to forest land when they started on a fairly large scale to put it under management in the late thirties. They had over ten years advance research. They knew how to plant trees, for example; we had done a lot of research on that. And we had done a considerable amount of research on silvicultural methods. In connection with, and as an offshoot from, our naval stores research had carried out careful experiments in prescribed burnings. In other words, we had laid the basis for many of the forestry practices. Then we, of course, went on with enlarged programs of research. I think you will find a consensus amongst the private forestry people here in the South that probably the thing that has helped them the most, that is provided by public agencies, is in the research that's done.

ERM: Research stations have made a very high mark.

VLH: They have made a tremendous contribution.

ERM: What methods did you find most effective in getting your research before the industry and before the general public? Were you chiefly dependent upon published papers and bulletins in monograph form to do this, or was there an active program of public speaking that went along with it?

VLH: Well, there was a great deal of public speaking that went along with it, and I think we depended heavily upon the forestry and trade associations to carry a good bit of the extension work. The Forest Farmers Association became active beginning in the early forties. Every state had its forestry association. It comes to mind that the staff of the Louisiana Forestry Association has been very prominent in this field. They have carried many articles on the results of research in their association magazine. They have gone on the lecture circuit and have spoken on these matters. Then, of course, we in research kept a stream of station publications coming out. That is one thing we have prided ourselves on.

I think we substantially improved our extension of research results to those who needed and could use them when we reorganized the state and private programs of the Forest Service and made one of the chief functions of these programs the extension of research results to the state forestry organization and to landowners. The

state and private organizations are now working in close association with the stations. In some areas their offices are in conjunction with the stations. They are continually holding workshops, holding meetings of various sorts, and getting out published abstracts or rewrites of recent research findings. They do a more sophisticated, popular-educational job than one can do in a lecture or by a research publication.

I don't mean to slight the state forestry organizations or the forestry extension work of the state university agricultural extension service. The state foresters and their staffs have played an increasingly important role in encouraging improved forestry throughout the South.

One of the purposes of the reorganization of Forest Service extension work was to relieve the Forest Service experiment stations and the Forest Products Laboratory at Madison, Wisconsin, of the inroads of such work on the researchers' time. The reorganization has helped. However, many of the bigger forest industries with competent professionals still prefer to go directly to the researchers for help in problem-solving. The Forest Service does not discourage this. The contacts are good for the research scientists.

- ERM: Do you see as an unfortunate by-product of this good meeting of the minds and free exchange of ideas between industry and public agencies like the Forest Service a public notion that industry and forestry were getting too close, that foresters began to lose their conservation image and began to be associated primarily with commerce?
- VLH: I have mixed feelings about that. I'm not sure how generally held that view is among the public. I think that if you want to find where the public got this notion, it was through the propaganda efforts of conservationists, the people who normally you would think would be close to the Forest Service. Certainly, they and the U.S. Forest Service should have goals in common. Yet I think the conservationists have done more to drive a wedge between themselves and the industry and the Forest Service by pointing their finger at the Forest Service and saying it is timber oriented, that it is in cahoots with the forest products industry. If you go back and look at the record you will find very few instances where the organized forest products industry has agreed with the Forest Service on programs for national forests and for private owners.

ERM: You are right. They were bitter opponents in many a battle.

VLH: Yes. About the only thing that the organized industry would come to Forest Service rescue on would be highly selective research, rarely, if ever, on action programs. Also, it can be said, their interventions on research were not always friendly.

ASSISTANT DIRECTOR, DIVISION OF SILVICS, 1937 to 1943

Function of the Division

ERM: Well, you were with the Division of Silvics from 1937 to 1943, I find on my well-ordered biography here. Could you tell us a little bit about what the function of this division was during this period? How did it relate to the developing thought on multiple use?

VLH: It was concerned primarily with timber management practices and fire control. Forest influences had been taken out of it before I arrived. Ed Munns, who used to head up the silvics division, had moved over to a new division with Forest Influences. Ted Haig was director of the Division of Silvics. I was his assistant director. Our work was practically all concerned with silviculture, forest management, fire control, genetics, things like that. As far as I know, our only connection with multiple use was in assignments that we were asked to do outside of our own division. One of my assignments was working on this Forest Outings.*

ERM: I was just going to ask you if the department did any analysis of silviculture as it related to recreation, wildlife, and watershed. It was more precisely zeroed in on its own narrower field, right?

VLH: That's right.

Public Regulation of Private Timberlands

ERM: Do you agree with the conclusions of the Copeland Report of 1933

*U.S., Department of Agriculture, Forest Service, Forest Outings: by Thirty Foresters, edited by Russell Lord (Washington, D.C.: Government Printing Office, 1940). For the Forward to this study, see Appendix A, pp. 158-159.

recommending national planning and federal acquisition of 224 million acres of forest land?*

VLH: Are you asking me, did I agree with it then? I don't think that I concerned myself at that time as to whether I ought to agree or not. I was not in on the development of the Copeland Report.

ERM: You wrote no part of the chapters.

VLH: I wrote no part of it. I attended none of the conferences on it. I was quite aware as to what was going on and some of the recommendations coming out of it, but I never felt concerned about it enough to try to think through what I believed personally.

ERM: It took a pretty strong anti-private forest ownership stand.

VLH: Oh, yes indeed.

ERM: One wonders whether at the time you had any thoughts about that at all, or whether in retrospect you have any thoughts about the report and what it accomplished in its time.

VLH: I'm not sure it accomplished very much. I think the statistics that it brought together probably had their benefits dulled by the fact that along with the same report recommended action programs that included regulation and broad acquisition programs. I think that was a mistake, looking back on it. Not that this country may not have needed it, but it just did not fit in with the ideology as I know it now. I learned to know it much better as I got more involved in policy matters. I think it was a mistake to have pushed regulation of timber-cutting practices as long and as hard as we did knowing the makeup of people and the likes and dislikes of people. I think we pushed public regulation too long and too hard, knowing the public as I know it now and how the people in general react to governmental regulations involving property rights.

You asked whether I think that regulation was in prospect today. I think that the kind of regulation that might be accepted now is likely to be restrictions on use of land in order to protect the environment. I feel that regulation of forest practices on private land only for the purpose of insuring an adequate national supply of wood is not yet in the cards.

ERM: There is speculation in Washington that an executive order or

*U.S., Congress, Senate, A National Plan for American Forestry, S. Doc. 12, 73d Cong., 1st sess., 1933. Also known as the "Copeland Report."

legislation is soon going to put a ban, or at least a two- or three-year moratorium, on clear cutting. And this may extend beyond the limits of just public lands. There may now be some endeavor to impose it upon private landowners, too. Wouldn't this actually be a detriment?

VLH: Yes. The impact of a ban on clear cutting would be serious and unwise for many reasons. Moreover, I can't see such a drastic regulatory measure actually getting by Congress at the present time. However, I stick to my thesis that should we get regulation of use or management of private lands it is apt to come in the form of restraints connected with environmental quality and not directly and solely related to production of wood. I think environmental-quality type of regulation of private lands is not a far-fetched idea. I think we may soon be seeing some of it. Before this happens we should have a lot more and much better land-use planning than we've had in the past. Along with the land-use planning would be zoning.

ERM: And this may impose regulations. I think you made allusion the other night to prospects of this having direct effect especially on small landowners who might, perhaps, be brought into a more cooperative view of conserving and using the resources on forest land. Do you see such possibility developing?

VLH: Well, again I must say I don't believe the country is ready for compulsion-type regulation of timber production for timber products per se to the point that this feature could be made part of the program to get higher wood yield out of the small ownerships. However, I feel that there might be other forms of regulation less harsh than outright compulsion that might be acceptable to the small owners and to the pressure groups and public opinion, for example, offering the small owner a long-term contract in which once signed he has no choice except to stay with it or else reimburse the public treasury for all the costs that the government has put into it. This, in a way, would be a form of regulation. However, the owner has a choice, an opportunity to say no in the beginning. Under a scheme such as this one might block up sufficient area in small ownerships for the government itself to provide or underwrite the services, provide the sort of forest land management practices that are needed.

ERM: Haven't private efforts ever been made to try to do this?

VLH: No, not exactly. As I was going to say, you might be able to make it possible so that private industry could do this. At the

present time I don't think private industry has the authority or would want to assume the risks of doing this on a general scale for the small owners. I think they would run up against both legal obstacles and profit problems. However, with the government paying part of the costs and offering financial incentives, a government-industry partnership might be practicable.

ERM: It is my understanding that some large pulp and paper company foresters have rendered management advice to small landowners. Is there any obligation to sell the forest crop to his company?

VLH: As I understand it, there is no legal commitment on the part of the landowner. He may feel a moral obligation to make his timber available to the company that rendered this management advice. But there is nothing that compels him to do so, and he can pull out anytime he wants to. He can sell to another company.

ERM: What if the company that's rendering the advice is the only company within marketable reach of the pulpwood?

VLH: I wouldn't say that is the general condition. I think there is enough overlap in wood-buying areas that there is competition. I think you could find alternative markets for wood in most areas.

The New Deal and Multiple Use

ERM: What impact did the legislation of the New Deal period have upon the developing case for multiple use on national forests? Did the Agricultural Adjustment Administration make any measurable input to that developing thought, or was any appreciable research financed by the AAA for the selection and propagation of extra-high yielding trees for naval stores? In other words, did the AAA contribute significantly to the advance of multiple use on the national forests?

VLH: I don't think so. I don't see any connection between multiple use and the Agricultural Adjustment Administration. My principal connection with this administration was while I was at New Orleans, at the time I was chief of the Division of Forest Management and Forest Influences Research. I was called into Washington along with Cap Eldredge to help AAA develop a program of benefit payments

for turpentine. I was called in because I had worked at the Lake City naval stores branch of the station. We outlined a program after some misgivings as to whether this was a wise governmental program or not. We were assured, however, that this was to be a temporary program of incentive payments. I'm quite sure that's what the AAA people thought at the time, but the program didn't turn out to be temporary.

The other day I got a publication that was probably sent to me by somebody out of pure sentiment knowing that I had helped develop the program at the very beginning. The program is still going, bigger and more active each year since 1936. You see that's close to thirty-five years. That's quite a spell for a temporary program.

ERM: What about the TVA [Tennessee Valley Authority] ?

VLH: No. The TVA is not in the land management business, for one thing. They did buy considerable land for reservoir purposes, but they got rid of all the land they didn't need for that purpose. Much of their power-generating effort in fields that impinge on forest land management, I would say would be inimicable to multiple use. This may be a harsh thing to say about TVA, which is quite a respected agency, as you know. But their great emphasis was on the development of power, and their use of coal has been a great stimulus to strip mining.

ERM: They have become one of the big strip miners.

VLH: Indirectly, yes, their heavy purchase of coal as fuel for steam plants and what they advocate has made a tremendous use for coal everywhere. As I understand, they have developed a methodology of using coal quite effectively in generating steam. This means more use for coal and more strip mining. I saw a program on television the other day. A man has just written a book about strip mining, and he tore into the TVA for the evil it has done his country; he comes from Kentucky.

ERM: Was this on the "Today" program of NBC ?

VLH: Yes.

ERM: I saw the equal-time antidote this morning. The moderator had Mr. Peabody of the Peabody Coal Company and the head of the Coal Manufacturers' Association for equal time this morning. These men

contend that present-day coal operators are doing a beautiful job of restoring the land after they have harvested the crop. They said that they favored regulation that was of an ad hoc variety, in other words, not anything that sets down a rigid pattern for every situation. Each situation, they argued, must be looked at separately with restoration of the land proposed according to rules set in each situation's study.

VLH: Well, all I can say is I accept that with a great degree of salt. I have had quite a lot of experience doing research on restoration of strip-mining soil banks, and I think we developed a methodology by which this could be done. But it certainly wasn't done, in the days I knew, by the industry. I haven't been through that area in the last few years.

ERM: The coal operators freely admitted that great damage had been done in earlier strip mining, and when Frank McGee pressed them with the question, "Well, aren't you going to go back and put it all right?" both of these fellows said, "No, we can't afford to do that. The harvesting that was done in earlier days went forward on the basis of no imposed public judgment that these lands ought to be put back in shape." They contended further that the cost of restoration was never cranked into the selling price of the coal that was harvested. If restoration is going to be done, it will have to be done as a venture that the public pays for now and not as something that the coal companies alone pay for.

VLH: I'm inclined to agree with them on that. I think the states have been very lax in passing the legislation that was needed. You can't blame a man who is not forced by law to do something if he doesn't go ahead and do it. To do otherwise might put him at a disadvantage with his competitors. This is the same fix we get in with the pollution from pulp mills. Until there is legislation that compels all of them to abate pollution, you can't logically expect them to voluntarily do more than what looks reasonable to a profit-conscious unit of our social institutions.

ERM: It's very easy to poke the finger of shame at the industrial types. It has become a very popular pastime, but there is a lack of logic in much such condemnation when you come to analyze it.

CHIEF, DIVISION OF FOREST ECONOMICS, 1943 to 1945

Impact of War on Research

ERM: Did you feel that there was an awareness of multiple use as a concept within the Division of Forest Economics between 1943 and 1945? Was multiple use considered sound economics by your colleagues at that time?

VLH: During that period, when I was head of the Division of Forest Economics Research, our whole thought was on helping to win the war, and our entire program was oriented toward assisting the War Production Board carry out its mission. We conducted surveys of timber supplies, sawmill supplies, the need for rubber tires, and that sort of thing, to help the war boards allocate necessary supplies--gasoline, trucks, and so on--to the forest products industry.

ERM: That was the sole purpose?

VLH: Yes. That was true for forest economics research and for other research as well. We had set aside just about our whole normal research program during that period. As a matter of fact, the rest of the Forest Service had set aside much of its work even in the national forests. At that time the national forest administration had a legitimate reason to put most of its effort on timber sales. In the first place, there wasn't very much demand then for the cultural benefits that come from resource use. Secondly, the justification was to provide the sinews of war so we could win it.

ERM: The old story of guns versus butter; in any case, where guns interfered with multiple use, multiple use went out the window.

VLH: Yes, I don't think that anybody even talked about multiple use during that period.

ERM: This must have been a very difficult period for the Forest Service itself, to see a lot of programming set aside. It is almost as if you came to a stop and went into high gear on the war. Many fondly held hopes must have gone a-dwindling.

VLH: Yes. To give you a little personal history during that period, probably the activity of the Forest Service that was hit hardest during the war was funds for research. These could always be set aside. Research wasn't something you needed immediately; it was something for the future. Anything for the future had to be set aside. Our research funds were cut clear, clear back, and we wouldn't have even been able to maintain a skeleton organization without the contracts with the War Production Board and the armed services that kept our stations and forest products laboratory working. These war-connected agencies were financing about all of our field stations; they were financing most of us in the Washington office.

During that period, Henry Clepper, who had been with the Society of American Foresters, was on detail as a special assistant to Phil Boyd who was one of the administrators in the War Production Board. Clepper knew what we could do. He knew what the board needed, and he helped a great deal in directing what they needed toward us and us toward officials in the board. I was the principal Forest Service contact with the War Production Board and the one to negotiate work agreements between it and the Forest Service. I was constantly running over to their offices. If I didn't come back at the end of each day with another fifteen to twenty thousand dollars, why, I considered I hadn't been very successful. At the same time our Forest Products Laboratory at Madison, Wisconsin, was constantly in touch with the armed services over their needs. The entire laboratory effort, much expanded over normal, was on war work. Our hope was we would win this war and get back on regular appropriations for research on forest production and forest utilization problems.

ERM: Wasn't the substitute-for-rubber proposition out West involved with research?

VLH: Yes. The guayule shrub from which guayule rubber is made. But we didn't get involved in that too much. I think that ARA [Agricultural Research Administration] got involved in the research. Guayule production was considered an agricultural operation for which soils and agronomic research was needed.

ERM: But wasn't the plant being cultivated on U.S. Forest Service managed forest lands?

VLH: On farm land, mostly leased, I assume. As a matter of fact, the Forest Service ran the project, but Forest Service research wasn't

involved. You're right, the rubber plant was being grown by the Forest Service. Chris Granger, chief of national forest management, headed the project in Washington for the Forest Service.

ERM: It was a ranger district project.

VLH: It was a special project separate from activities in the national forests. It was organized and run by the Forest Service with a tremendous amount of money and effort going into it. They had a small amount of research to help them guide it, but they drew on Charlie Kellogg and a few others in the Department of Agriculture who were experts on soil, experts on chemistry of rubber, and that sort of thing. But the big job was preparing the areas, planting the guayule and then cultivating the guayule to a harvestable stage for the manufacture of rubber out of it.

Impact of War on Multiple Use

ERM: How did the war affect the budget in the Forest Service for things like wildlife and watershed management on the national forests?

VLH: I think they just about decimated them.

ERM: Was the whole emphasis put upon timber production?

VLH: And grazing. As I recall, we had to soften up the regulations of cattle stocking on ranges during that time in order to produce more beef. This action was probably the hardest for the Forest Service to take, but it was a movement along with many other sacrifices.

ERM: How great a drain on the national forests did this provoke?

VLH: I don't think it did great permanent damage. It didn't go on long enough. Fortunately, we won the war in a relatively short time, but it did aggravate the problem of range restoration because of the overstocking, which was bad enough before. And it was probably even more difficult to pick up where we left off, to regain momentum on control of range use. And as for the timber, I don't think it had any permanent effect at all. Without doubt, however, there was damage to watershed protection because overgrazing and less attention to logging caused erosion and runoff.

DIRECTOR, NORTHEASTERN FOREST EXPERIMENT STATION, 1945 to 1951

Reappraisal of the Forest Situation, 1946

ERM: From 1945 to 1946 you participated in a reappraisal of the forest situation under Assistant Chief Ray Marsh.* What generated this study? Was it just purely the end of the war and the whole national tendency to take up reappraisal of everything, or was there some other force behind this?

VLH: Yes, I think there was. It has been customary for the Forest Service to periodically appraise the timber supply and demand and the forest and range conditions. We haven't been able to do as good a job in the water areas or in the wildlife habitat and recreation fields as we have been able to do in timber. At that time, there was a lot of interest especially in the timber resource because of questions being raised about the adequacy of our national wood supplies. Timber shortages during the war had stimulated some of the questions. You may recall that during that same period industry was stoutly claiming that we had nothing to worry about, that there would be timber coming out of our ears.

Stanford Institute Report, 1954**

ERM: Was this before the Stanford Institute Report?

*U.S., Department of Agriculture, Forest Service, "The Management Status of Forest Lands in the United States," by Verne L. Harper and James C. Rettie. Report 3 of U.S. Forest Service, Reappraisal of the Forest Situation (Washington, D.C.: Government Printing Office, 1946.)

**Stanford Research Institute, America's Demand for Wood, 1929-1975 (Tacoma, Washington: Weyerhaeuser Timber Company, 1954.)

VLH: Yes. The Stanford report came along later. It was largely an office-type analytical study of Forest Service Forest Survey data, industry reports, and other statistics related to the timber supply and demand situation. This study was financed by the forest industry. By and large, the statistical conclusions of this study were not greatly different than those of the Forest Service reappraisal project. The big difference was in the credibleness that the Stanford report had for industry.

Also, it came along at the time when the forest products industry was expanding its forest holdings and looking to timber management of its forest properties rather than to its former practice of cut-out then sell as cutover land or, failing that, abandonment of the land to the taxing counties.

This was the period of economic expansion after World War II. The forest products industry was now in a receptive mood about the outlook for expanding wood markets and the need to keep forest land productive. Its position remained hard-set against the Forest Service's warmth for regulation and other public programs, however. It was suspicious of the close connection of the Forest Service's statistical reporting and the program interpretations in the Forest Service periodic appraisals.

There was far more reason, it should be said, for the Forest Service to periodically round up its Forest Survey statistics and related information on supply and demand for timber than for the purpose of justifying forest regulation. The analyses in these nationally concluded studies provided the major guidelines for a great deal of our national forest, research, and statewide private work. The statistics of timber supply and requirements were research jobs performed with increasing skill and objectivity. The interpretation of the statistics in terms of program action necessarily involved considerable value judgments, of course.

The reappraisal project was the last periodic national appraisal in which the basic statistics and their analyses were presented in one comprehensive report containing program recommendations as well. Thereafter, the two were kept quite separate, a practice of which I was a strong advocate. Our whole research organization welcomed this change, particularly the Forest Survey group, on which much of the work fell.

ERM: How many people did a program of that kind put to work?

- VLH: Well, I suppose we had a group of maybe thirty or forty in Washington for a period of two or three months. Some of us spent a much longer time than that, of course. I was Marsh's chief assistant and spent about two years on the project, one year of which I was on detail from my new post as director of the North-eastern Forest Experiment Station.
- ERM: What about in the field?
- VLH: In the field, except for the Forest Survey units, the work was done in connection with other activities. It was pretty hard to get a reading on just how much time was spent by personnel outside of the Forest Survey and related economic research work. Their contributions were substantial.
- ERM: Did it involve putting on part time help?
- VLH: No, we did it with the regular force. And, of course, the Forest Survey in the field divisions of economics were mostly involved full time because the job required bringing together all the estimates they had on Forest Survey and, where they had not made a recent field survey, finding a way of bringing data to a common point in time. Rounding up and analyzing Forest Survey results on a periodic and national basis is a normal job of the Division of Forest Economics Research. In the case of the reappraisal project, the big push was put on in Washington after the Forest Survey and related data were in from the field. The job then was to prepare data summaries and program implications. For that purpose we brought in from the field selected personnel from among our top people in both national forest administration and research.

Multiple Use in the 1940s

- ERM: In the Forest Resource Appraisal made by the American Forestry Association in 1946 it was stated that forest management involving reasonably careful logging accompanied or properly followed by restoring measures, works no appreciable reduction of watershed

value, but tends rather to increase them.* Do you agree? If so, how does logging practice increase watershed values?

VLH: First as to whether I agree to the statement. In general, I agree that no appreciable reduction of watershed values will come from properly laid out logging and skidding roads, skidding of logs without serious disturbance of soil, and restoration after logging of roads and disturbed soil to a water-spreading state. But, as you no doubt know, assuring no appreciable reduction can be a highly complex, professional task.

Now, as to whether and how logging practice increases watershed values, the subject becomes still more complex. I would not expect much, if any, improvement in water yield from the ordinary logging operation even though carefully conducted to prevent erosion and overland runoff of water. Unless the logging and related practices were designed to manipulate vegetation toward a chain of actions that would surely follow through natural processes, any increase in water yield would be either quite temporary or entirely accidental. Manipulation of vegetation to enhance water quality and usable flow from underground springs and stream drainage is a highly sophisticated undertaking.

It can be done, of course. The Forest Service is doing it in some areas of the national forests, using methods developed in our Forest Service research. Also, I believe the Northeastern Station of the Forest Service has been conducting research on watershed treatments for municipal watersheds in cooperation with municipalities. One of the objects there is enhanced water values.

Logging can be used in the West to create certain patterns in the residual stand that will cause snow to drift in banks in high mountain snow areas. The snow banks will melt much more gradually than evenly spread snow. The slow melting of snow prolongs the seepage of water into the soil, and the eventual bleeding of the soil water into stream channels keeps the streams alive much later in the summer than had there been no accumulated snow drifts as sources. Logging also can be used to convert an area from trees that are water demanding for their life processes, to grasses, which are less water demanding. One would have to maintain the land in grass cover, however, in order to retain the saving from evapotranspiration.

*American Forestry Association, "Forest Resource Appraisal," 1946, Box F13, American Forestry Association Papers, Forest History Society, Santa Cruz, California.

ERM: In the Forest Resource Appraisal of 1947 the American Forestry Association board of directors stated that, "While production of wood may be regarded as the most important use upon a major portion of the nation's forests, the fact is that certain very large areas possess watershed and other values, which may take precedence over commercial wood production."* Would you have agreed with this statement for the 1940s or 1930s?

VLH: Yes, in the 1930s and the 1940s I would have subscribed to that statement. Our scale of values by which we judged the extent to which commercial wood production takes precedence has been shifting toward the other forest values. Accordingly, I would be inclined now not to adhere to such a sweeping statement. I am beginning to doubt the wisdom of giving timber values such a dominant position anywhere that it would enjoy priority over, say, all environmental amenities to a point they could be ignored.

*American Forestry Association, "Forest Resource Appraisal," 1947, Box F13, American Forestry Association Papers, Forest History Society, Santa Cruz, California.

DEPUTY CHIEF FOR RESEARCH, OFFICE OF CHIEF OF THE FOREST SERVICE, 1951 to 1966

Multiple Use-Sustained Yield Act, 1960

ERM: Dr. Harper, I wonder if you could set forth something of the story of how a key piece of legislation like the Multiple Use-Sustained Yield Act actually is planned, drafted, comes into being--the various steps that go into the creation of this kind of legislation.*

VLH: I'm not sure I could distinguish how it was done with the Multiple Use Act from how it would be done in general with any act. So maybe I'd better speak first, at least, to any bill that might be introduced in the Congress. The origin of bills can be either in the administration itself, say, with an agency which has responsibility for a particular program, or it can be from the Congress or even maybe with the constituents of a congressman. But regardless of its origin, the executive branch, as a rule, is asked to do a drafting service for the bill. This is to at least give them a start. In the Forest Service there is a group skilled in drafting legislation along the lines that a congressman has requested or along lines that the agency itself has determined would be desirable.

The Multiple Use-Sustained Yield Bill originated in the Forest Service. This was to be statutory authority that the Forest Service felt it wanted, and, therefore, it originated the bill, although I understand that there had been a bill introduced even before we got our bill up to the Congress. As you know, there is a rather long channel that proposed legislation must travel before it actually reaches the Congress if it is an administration bill. It must pass the White House, as we say, which means the Bureau of the Budget, and any other agency that might be concerned with it. Only after it has been reviewed and the White House is satisfied that this is in the interest of its administration will it be sent up as

*Multiple Use-Sustained Yield Act of 12 June 1960, 74 Stat. 215, 16 U.S.C. secs. 528-531 (1964). For the text of this act, see Appendix B , p.160.

an administration bill; so it takes a little time to negotiate all the hurdles.

ERM: And it can be hung up endlessly.

VLH: Yes. Sometimes it is hung up endlessly. Sometimes bills go through rather rapidly.

ERM: So, in a sense, if a bill is being initiated within the agency, as with a multiple use bill, it's beholden upon the agency to sell its idea all along the line that has to be traversed before the bill gets into the hopper on the Hill. Is that right?

VLH: That is correct.

ERM: That's a pretty ticklish and precise job isn't it?

VLH: Yes. My understanding is that this particular bill was practically rewritten in the Bureau of the Budget because they didn't like the language used by the Forest Service architects of the bill. Much of the substance was retained, but they had their preference for language, and they introduced some new ideas. Also, a lot of this was done in consultation with the Forest Service.

ERM: Who in the Forest Service was the principal architect of this bill?

VLH: Well, Reynolds Florance did the technical drafting, but this proposed bill came under the supervision of Ed Crafts who was the deputy chief in charge of legislation and program contacts with other agencies. Crafts, no doubt, initiated the substance of the bill.*

ERM: So Reynolds Florance and Ed Crafts were the men in the Forest Service who probably had the most profound impact in the creation of the actual bill itself, is that correct?

VLH: That is correct.

*See also, Edward C. Crafts, "Forest Service Researcher and Congressional Liaison: An Eye to Multiple Use," typed transcript of tape-recorded interview by Susan R. Schrepfer, Forest History Society (Santa Cruz, California, 1972).

ERM: Of course, a step of such importance would be the subject of many sessions of chief and staff before the decision is made to go forward with the drafting of such a bill. Were you party to those discussions?

VLH: To some extent. I was in on some of the discussions, probably not nearly all of them. But I knew what was going on. I knew the issues at stake. I knew what the decisions were when they decided to go ahead. In fact, I guessed considerably in advance of [Richard E.] McArdle's ratification of the idea that Ed Crafts's ideas would prevail; and I was in sympathy with them.

ERM: Thinking back to those times, what do you recall from those discussions of the issues that were at stake?

VLH: Well, I think that the biggest issue at stake was whether or not we should seek the legislation; whether this would be a wise thing to do. There seemed to be some risk involved, at least in the minds of some folks. They felt that we already had this authority, but the proposed legislation would give the Congress another chance to consider the whole matter, and legislators could change their minds. They could say, "No, we sort of inched into all of these authorities that you now have and after reconsidering it, we have decided to take away some of them." So some who were in on the Forest Service considerations felt that it was a little risky. I personally did not subscribe to that view. I didn't feel that there was much risk involved in it. My hunch was not derived from what the politicians were saying or doing then but from my understanding of grass roots politics.

ERM: Who were the people who were most leery of taking the risk?

VLH: I think right within the Forest Service, as I recall, Ed Cliff himself had some reservations. He felt that there was risk involved in it.

ERM: Ed was then in what position?

VLH: He was deputy chief in charge of National Forest Management, and I think he felt that what he was doing was backed up by all the authority he needed and that the big job ahead was to try to make multiple use work. And there were others, I understand. Ray Marsh, who occupied the legislative position in the Forest Service ahead of Ed Crafts, had some reservations about going ahead with it. I understand Chris Granger was another one. I wasn't in on the conferences with them, but this is what we were

told at the time. As I recall, there were no others in the chief's staff who had any great reservations about it. If they had any reservations at all, it was, "Well, why bother about it? We think we've got the authority, let's get ahead on the job of trying to get a program here of harmonizing these uses in a constructive way."

But I think there were--you asked about the issues--I think there was another issue that really swung it, at least as far as I'm concerned. The issue was that this would be a very useful way of focusing national attention on the fact that the national forests are multiple-use forests--something that we're not sure that the public knows at the present time; we're not even sure that all the congressmen and senators know--and that we would kind of like to see the special interests involved in this come together under a topic which says that, "We would like to see the authority reaffirmed by the Congress that says that these lands shall be managed in accordance with multiple-use principles." I think most of us felt that this purpose would be usefully served.

ERM: This legislation sought to reconfirm and to solidify, probably to codify, the whole structure of Forest Service authority in this area.

VLH: That certainly was the argument that appealed to me most. It was the one under which I was perfectly willing to see it go ahead.

ERM: Isn't this perhaps a natural thing that develops in every area of government?

VLH: I would think so.

ERM: You have from time to time a fogging of lines of authority or responsibility and public understanding that you want clarified.

Research Legislation: McSweeney-McNary Act, 1928

VLH: Yes. I think we went through that same thing in the 1920s with the passage of the McSweeney-McNary Act, which again was a

Forest Service sponsored piece of legislation.* It didn't originate from the outside. It was sought by the Forest Service, and I think mainly for that reason we wanted reaffirmation from the Congress that it was the will of the Congress that we have a forestry research program of a broad dimension. Understand that we already had all the authority, but it existed in previous legislation; it was scattered.

ERM: I made some notes last night on the McSweeney-McNary Act, which more or less laid down a charter of research for the Forest Service. I had several questions I wanted to ask you about it. I was reading your chapter, entitled "Forestry Research", in the commemorative sixtieth anniversary volume of the Society of American Foresters.** In this you cited a report published in 1926 that had been sponsored by the Society of American Foresters. This report was called, A National Program of Forest Research, and it was authored by Earle H. Clapp, R. C. Hall, and H. B. Hastings.*** This work outlined the important existing forestry problems and posed a broad program of research for their solution.

This led to the writing and passage of the McSweeney-McNary Act of 1928, which authorized the system of Forest Service regional experiment stations, a nationwide Forest Survey, and expansion of a broad forestry research program. This act was, as you defined it in your chapter of this book, "the basic charter for federal research activities in forestry" and "a profound influence on the development of research by the Forest Service and other agencies." ****

*Reforestation and Forest Products Act of 22 May 1928, ch. 678, 45 Stat. 699, 16 U.S.C. secs. 581-581i (1964).

**Henry Clepper and Arthur Meyer, American Forestry, Six Decades of Growth (Washington, D.C.: Society of American Foresters, 1960), pp. 36-49.

***Ibid., p. 37; Earle H. Clapp, A National Program of Forest Research (Washington, D.C.: American Tree Association, 1926).

****Clepper and Meyer, American Forestry, p. 37.

I wonder how you see that charter now after nearly half a century of personal involvement in forestry research. What do you see as its strengths and weaknesses? If you could go back in time would you make changes in that program of research in the last forty-four years?

VLH: Yes. Well, I'm not sure that I'd make many changes in the basic charter in the McSweeney-McNary Act over the few that have been made from time to time since its passage. There were a few amendments passed since then, one of which I was responsible for, which gave us authority to make grants to nonprofit institutions for research, which brought other skills into the total effort. That was not part of the original McSweeney-McNary Act. But this legislation was incorporated in the Granger-Thye Act of 1950, as amended.* Of course, there were other minor changes that have been made from time to time. The original act set limits on appropriations, which didn't hold for very long; they've had to be lifted since. But by and large, the research act of 1928 is still good, and I see no reason for substantial modification at the present time.

I would say that perhaps the major change that I was instrumental in making in research legislation, when I had responsibility for federal research in the Forest Service, was incorporated in the McIntire-Stennis Bill.** The Forest Service didn't ask for authority to make federal grants directly to universities for forestry research during the time of the McSweeney-McNary Bill for two reasons. One was that grants didn't rate well with the Forest Service at that time. The other was that authority already existed in the Hatch Act, an agriculture research grant act.***

The Hatch Act as amended is the basic law that authorizes federal funds to agricultural experiment stations for a broad range of research in the field of agriculture. And it always has been

*Simplification of Work of Forest Service Act of 24 April 1950, ch. 97, 64 Stat. 83, 16 U.S.C. secs. 504a-581 (1964).

**Forestry Research, State Plans, Assistance Act of 10 October 1962, 76 Stat. 806, 16 U.S.C. secs. 582a-7 (1964).

***Establishment of Agricultural Experiment Stations Act of 2 March 1887, ch. 314, 24 Stat. 440, 7 U.S.C. secs. 361a-i (1964).

interpreted to be broad enough to cover forestry. However, the very small amount allocated by the state experiment stations to forest research reflects the narrow view in which forestry problems had been seen by the state universities over the years. Also, it hadn't grown because forestry was in competition with older, well-established fields in agriculture. It became only too apparent as time went on, at least to me, that the Hatch Act would never do much for forestry research. Therefore, beginning about 1949 I became the principal proponent of special legislation to funnel federal funds to the states on a matching basis in support of forestry research in forestry schools at universities, particularly the state universities.

To put across such an idea you had to start selling it to a lot of people. I think I had more difficulty in the early days of my push selling it to my colleagues in the Forest Service than I had selling it to our agricultural colleagues in the Department of Agriculture.

Research Legislation: Whitten Act, 1956*

The movement that led up to the introduction and passage of the McIntire-Stennis Act had a long history. I became concerned about the lack of research being done at the state level back in the 1940s. And in a report that I prepared in 1949 in response to a congressional request as to the status of cooperation between the Forest Service and the state agencies I included a recommendation that called for special legislation comparable to the Hatch Act, but, in this instance, directed toward the field of forestry specifically. It would provide federal funds on a matching basis and help stimulate research at the state level.

ERM: You made this recommendation when you had a position in the field?

VLH: Yes. At that time I was director of the Northeastern Forest Experiment Station, and I headed up a committee to prepare this report.

* Availability of Funds for Cooperative Forest Service Research Act of 6 April 1956, ch. 176, 70 Stat. 100, 16 U.S.C. sec. 581i-1 (1964).

It involved collecting basic data, its analysis, and then report writing. The request, of course, was made on the chief of the Forest Service. The assistant chief of the Forest Service in charge of Research was Ed Kotok at that time, and Ed Kotok, knowing that I had just been through the throes of helping to prepare the reappraisal report, felt that probably I was in the best position to chair this committee.

As lots of committees turn out, the chairman does most of the work. Unless you want a true committee report, a product that looks something like a camel, why somebody has to take the lead. And this is what happened. I got lots of help from the other stations in collecting the data, but when it came to its analysis and report writing, I did that myself with the help of Jim Rettie, who was at that time working with me at the northeastern station. Our only recommendation on new legislation was for authority to channel federal funds to the states on a matching basis in order to stimulate forest research.

It fell with a thud like a ton of bricks; it just didn't go over in the Forest Service. I was told that the Forest Service was against it. I knew that it was Ed Kotok who had the main responsibility. He felt, in the first place, that we had our hands full with our in-house research and, therefore, Why should we help our competitors do their job? I looked at it in another way, that we're all in the same boat and that there was a total job to be done and we ought to work together with as many agencies working on it as possible. But that view didn't prevail. It never passed the Forest Service's Washington office review of the report.

ERM: What was the chief's attitude at that time?

VLH: I don't know. I was in the field, of course; I was director of the Northeastern Forest Experiment Station and was not brought in on any conferences about this particular report. I don't know to what extent it got review. It could have stopped with Kotok as far as I know. Perhaps not. Had he reviewed it with the chief and top staff, I'm sure his recommendation would have carried weight. And so I'm not surprised it was omitted from the final, revised report that was sent up to the Congress.

No one outside of the Forest Service family, and perhaps few within it, knew that I had recommended a federal grant program. Had this been more widely known I might not have been called into the Washington office to take over the job of assistant

chief in charge of Research in Kotok's place. This was in 1951. Kotok was retiring. I fell heir at that time to one more requested report that he had engendered in his testimony before the appropriations committee. I might say that appropriation affairs weren't going very well for the Forest Service at that time in the field of research. Kotok wasn't having success during the last few years in getting even the funds that the Bureau of the Budget was willing to request.

ERM: Why was this?

VLH: I don't know, other than that much of the trouble could have stemmed at that time from the House Committee on Agricultural Appropriations. Jamie [Lloyd] Whitten was chairman of that subcommittee, and he was a tough one to appear before. He was hard on all research at that time in the Department of Agriculture. I'm not sure he was just singling out forest research. He was giving a hard time to all the research agencies. On top of that I think Whitten felt there was a creditability gap. At least he would take advantage of Ed Kotok by asking him real tough questions about details that even I who came up through the research route couldn't have answered when I got to be Research chief in defending appropriations. Kotok tended to be superficial, and because he didn't do a good job of answering, Whitten used that to imply that Kotok didn't know what was going on. Accordingly, the committee would take the position that since there was confusion it shouldn't appropriate funds for increases but instead should ask the Forest Service for another special report. Requesting a special report was a tactic in high fashion then in Congress. It served the get-us-off-the-hook purpose and a save-us-from-flat-denial position.

ERM: But this is a typical tactic of Congress when they want to shoot something down, to confront those who are testifying with a very hard line of questioning.

VLH: Yes, that's right. To continue with what I said, their favorite stunt was to stick you with another report to write. And so the committee said to the Forest Service, "Now, we want you to give us another report on your cooperative relationship with the states." Jamie Whitten had a belief that somebody else should help out on the research job. He said, "Why am I getting these requests that the federal government must do this job? Don't the states have a responsibility? Doesn't private industry have a responsibility? What are they doing in research? Will you find out for me and write a report and make a recommendation as to what the Forest

Service and the Congress should do?" I had a sneaking hunch that Ed Kotok was glad to bow out right at that time because he was getting perhaps a little tired of these requests for reports coming almost every year.

I had done the previous one, and so it seemed natural that this one I should personally take on, also. My remark to my research division directors was, "This is one that we'll do our best to comply with." Then we racked our brains, "What can we come up with this time that is different from what has been said before?" This is when my scheme was born that later became known as "coop-aid research." The idea was that we would ask Jamie Whitten to sponsor new legislation that would give the Forest Service permission to make grants to nonfederal agencies or individuals for purposes of stimulating joint effort between the grantee and the Forest Service on specific projects. The conditions as to whether or not matching of federal with nonfederal funds was to be required were not to be specified in the legislation itself, but rather left to the Forest Service to decide on a case-by-case basis.

So we concluded our report to the effect that the one thing that would probably stimulate more cooperation between other agencies and the Forest Service would be the authority to use some of our funds to help the cooperators do some things that they couldn't otherwise do because of lack of cash. In discussing the report with Whitten, I used the example of a university professor who has time and a graduate student, but he has no money for a research project. If he had a little money to pay an assistantship for that student to help him on the research, he could get a lot of student assistant time for the research, while at the same time the student used the research toward a masters' degree or even a Ph.D. Thus you would be buying a great deal of research with very little money.

The architects of the proposed bill were Harry Irion and myself. Irion preceded Reynolds Florance as the Forest Service expert on legal matters concerning cooperative agreements, legislation, and so on. Irion did the technical job of drafting the bill. The report justifying the opportunity to increase cooperative research was drafted by William Duerr, then a member of our Forest Economics Research Division in Washington. This was done in the winter of 1951 while I accompanied Lyle Watts to the month-long FAO [Food and Agricultural Organization] conference in Rome. The report with the proposed bill as appendix--all duly polished and cleared with the

Agriculture Department, Bureau of Budget, and other offices--was ready for delivery to Chairman Whitten on our appearance before his Subcommittee on Agricultural Appropriations in March, 1952.

Whitten seemed much interested. Congressman Whitten, said he welcomed the legislative recommendation. He gave us permission at once to use funds for the purpose we suggested pending clearance of the bill in the legislative committee. Whitten introduced the bill at his leisure without change. It passed without hearings being scheduled for it.

ERM: Then this would have been about what year?

VLH: It passed in April, 1956, and we started using the new authority in that same year, I believe. As I recall, we did not use the appropriation-process authority given us by Whitten in 1952. Our Forest Service fiscal agent thought it not adequate for auditing purposes. However, we began making coop-aid grants under the Whitten Act authority as soon as feasible. The grants were very modest in amount in the beginning.

It was not easy to persuade our regional forest experiment stations to use their funds for this purpose. I personally spent much time in writing memos and in discussing the matter with the stations, pointing up the advantages to the forestry schools and to our own program through use of coop-aid grants.

ERM: Don't those opportunities for cooperative agreement between research stations and academic units persist today?

VLH: Yes. It is a continuing program. I don't know just what level it's funded at at the present time. This would depend on the current policy of the Research chief in Washington.

The policy that I developed and that was in use when I left in 1966 consisted of first building a kitty for research grant purposes by taking money off the top of our appropriated funds each year before allocating the funds to our research operating units for use on their in-house research projects.

A certain amount of these grant funds were then allocated to the regional field stations and the FPL [Forest Products Laboratory] at Madison, Wisconsin, as coop-aid funds. Provisions in the allocations prohibited the field units from making overhead assessments and required that all of it was to be used only in making

coop-aid grants to nonfederal agencies for research that was closely related to their own authorized in-house projects.

The remainder of the grant-fund kitty was held in Washington and administered as a grant program based on competitive project proposals made by nonfederal institutions. The single grants in this program were much larger as a rule than those of the coop-aid program.

Why did I earmark coop-aid funds in the station budgets and stipulate that such funds must be used for that purpose? It was to give the directors of the stations moral encouragement and an authority to lean on if they wished to deny their own project leaders the funds instead of giving them to outsiders.

As you can imagine, it would be unusual at a station not to have crying needs for more funds being pressed upon the director by his own project leaders. In those beginning days of our coop-aid grant program I found the competitive pull on station directors of the university professor's need for research funds no match at all with the hungry appetites of the station's project leaders for all the funds they could get.

In this connection I am reminded of a cat that we had that had a batch of kittens off in the hedge from the house. She was always meowing around at the back door for food. We'd give her a nice big chunk of hamburger and expect her to take it to the kittens. The old cat would take it very gratefully and bravely start toward the kittens, but always before she got there she had swallowed the meat. Well, this was what was happening to the coop-aid allotments of funds given the stations before we took away their option of using the extra money as they saw fit.

Well, that is a precursor to the McIntire-Stennis program. I discovered that our project grant programs weren't anywhere near big enough and that, really, we ought to be thinking in terms of millions of dollars, rather than in terms of thousands of dollars or even a few hundred thousand dollars. A few hundred thousand dollars were about all I could see in prospect as project grant funds. Another limitation of the project grant programs was that they were on the basis of the fields you were doing research in and on the basis of who could help you most in your own projects. I thought that what the forestry schools desperately needed was a base allotment that they could reasonably count on year after year so that they could use such allotments as a leverage to go out after

matching funds to build up their total programs of research for use on projects determined by their own scale of priorities.

ERM: Excuse me. Do the individual stations have to use up that part of the kitty that is apportioned to them each fiscal year, or can they have it back?

VLH: It has to be used up each year.

ERM: Has it been used up?

VLH: Oh, yes. There was never any problem about it being all committed. You understand that once the money is obligated it is considered spent in federal accounting terms, even though the contract runs for several years.

ERM: The fact that it is not retrievable is, of course, the incentive to get it spent.

VLH: Yes. This is true of most of our appropriations, you see. Any money not obligated in a fiscal year reverts to the treasury.

ERM: How much are you limited by matching funds?

VLH: There are no requirements for matching in the Whitten Act itself or legislation authorizing other project grant programs. Each project is negotiated as to contributions to be made by grantor and grantee.

ERM: In other words, the organization that's doing the work would not necessarily have to put up anything. Is that it?

VLH: They wouldn't have to put up anything. Matching can be 95 percent or zero. The project can be totally federally supported, or it can require substantial bearing of cost by the grantee. We deliberately wanted this flexibility in the Whitten Act; there is nothing in the legislation that would limit this.

ERM: It's purpose is to stimulate research, not to frustrate it. All right, go on with this.

Research Legislation: McIntire-Stennis Act, 1962*

VLH: Well, as I say, realizing that this wasn't going to be sufficient to do what I had in mind that needed to be done, I looked to other avenues of obtaining my original goal of a Hatch Act, in effect, for forestry. Beginning in 1956 I found a way to bring the influence of forestry schools to bear on cooperative research arrangements by getting them involved in some of the discussions that we were having in the field of research at that time in the Department of Agriculture.

We had just completed a review of the research field as we saw it from the department-wide federal view, and we wanted to bring the state agriculture experiment station directors in to get them to look at our results from their viewpoints. Our hope was to make the final report of our efforts a rather comprehensive view of the country's problems and needs for research in the agricultural and forestry fields. I had just successfully gotten the forestry school deans included in the department's invitation to the state universities for representation at a joint department-state meeting.

I should back up just a little bit to say I wormed myself into these discussions earlier in 1956; it was probably the first time the department had formally made forestry a party to the agricultural research discussions that were going on. This they had not been in the habit of doing. Therefore, for the first time, as far as I know, the Forest Service was recognized within the

*Forestry Research, State Plans, Assistance Act of 10 October 1962, 76 Stat. 806, 16 U.S.C. secs. 582a-7 (1964).

Department of Agriculture as having a research organization of sufficient distinction to be included in the department's research policy deliberations.

When we got to the stage that we wanted to bring in state consideration of the report, which we had jointly proposed within the department, the question came up, "Who is going to represent the states?" I insisted that we should have forestry school representatives who would know the forestry field from the state point of view come in. I didn't feel that the agriculture experiment station directors had an adequate view of the forestry problems. This created a problem of protocol for the Department of Agriculture. It didn't want to appear to be dictating to the states who should come in, but it agreed that the department would take the matter up with leaders in the state agricultural experiment stations.

Well, the state research directors apparently agreed that we would have one or more forestry school deans in on it. Frank H. Kaufert was the first one to be invited. I think he was the only state forestry research representative at the first joint conference we had. Then on subsequent ones we brought Dick [Richard J.] Preston, Jr. in from the State University of North Carolina. And then finally [Ruthford H.] Westveld from the University of Missouri. So, we had three deans of forestry schools in on these early discussions during 1956 and 1957. After the joint meetings these deans would usually meet in my office to review with me their experience. For the first time, I take it, they were sitting alongside agriculture experiment station directors and having a chance to talk about forestry problems. I didn't realize it, but apparently this hadn't been going on at the state level in all states, anyhow, maybe in some, certainly not in all.

They all agreed that we've got a long, hard, educational process ahead of us and that the people in agriculture research, including their own directors in the states as well as agricultural research leaders generally, were heavily oriented to agriculture. They knew a great deal about the problems of peanuts and hogs and cattle and growing sorghum and that sort of thing. To them, trees were only another crop, and a minor crop at that, growing on the back forty that had no substantial market value to offer the farmer. And, therefore, the amount of research going into forestry probably was quite liberal already so why worry about the need for more.

Well, we knew this wasn't true, of course, but how is one going to proceed to change that view? I told them I was working

on it and that there were ways at the federal level that I could probably be influential, and I asked them to think of ways at the state level. I suggested to them, "Why don't you get organized? You, apparently, are not having much success in making your views known to ESCOP [the Experiment Station Committee on Organization and Policy of the Association of Land Grant Colleges and State Universities]. ESCOP is a powerful group around here." I added, "Isn't there some way in which you can organize the forestry school deans so that you can negotiate on a group level rather than on an individual basis?"

The upshot of our meetings was that the forestry deans did organize and they won a place for their organization in the complicated structure of organized interests pertaining to the land grant colleges and state supported universities. Westveld, dean of the forestry school at the University of Missouri, was the stem winder in getting this done. He had help from some of the others, notably Preston. Beginning about 1958 there was already noticeable evidence of an awareness by the state agricultural research leaders of the forestry presence. It continued to grow each year.

During that same period I made it a point to get invited to the regular annual meetings of ESCOP. I was often asked to speak at their general meetings and to sit in on the forestry discussions in subcommittees. At one of the general meetings, in 1959 or 1960, in which committees made their reports, a committee chairman very candidly told the meeting that his committee recommended that the agriculture experiment station directors take a position of need for an expansion of forestry research at the state level. He bluntly stated the case in political terms, that there was a rising interest in research on forestry problems coming from the politicians and that the state agricultural research directors had better be with this movement. He pointed to the recent increases in research coming to the Forest Service and the growing restlessness of the forestry schools; and he wrapped up his report by saying that something political is sure to happen soon on forestry research at the state level and you directors had better make sure you are in on it.

It was shortly after that, in the late winter or spring of 1961 as I recall, that I was visited by the legislative committee, which at that time was chaired by [F.] Earl Price, who was director of the agriculture experiment station in Oregon. Coming from Oregon, he was probably better acquainted with forestry problems than most of the other agriculture experiment station directors, and

he undoubtedly had quite a lot of influence with the others in getting their concurrence on a constructive legislative course in forestry research. Price did most of the talking for his group. In effect, what he said was, "We have come to the conclusion that something ought to be done. We don't know what is best to do. We think maybe you have ideas on this, and we would be glad to have you give it your best thoughts and take the lead on it if you will."

We discussed alternative courses of action, and they observed, in words about as follows, "We'd be perfectly willing to see the Hatch Act funds earmarked for forestry even though we have resisted any earmarking, whatever, up to this point. But we will make an exception in the case of forestry if you feel that that is the best congressional route to go. Or, if you feel that new legislation is needed, an act something like the Hatch Act but directed toward forestry research, we'd be willing to go along that route. We want you to know that the agricultural experiment stations' directors want in on what is worked out and you have our backing." And with that they left it pretty much in my hands. I had already expressed to them a preference for new legislation provided unexpected obstacles didn't develop.

This was exactly what I had been waiting for. Here we had the forestry school deans back of it, agriculture experiment station directors back of it. Now it was just a question of making sure that there were no serious objections to the idea within the Department of Agriculture. And, I think, for the first time, I began to take up seriously the mechanics of federal-state cooperative research with my own research group and with the top staff in the Forest Service. There were a lot of questions asked about it because this was a new tack, this was a new policy for the Forest Service. Always before they had rejected the idea.

But, after considerable discussion, both my top research staff and the chief's staff agreed that this would be all right; we would go along the new-legislation route. It was decided that in this particular case I would take the lead in nurturing the legislation through the Congress rather than ask Ed Crafts to do it. This was at Ed Crafts's request. Since I had been so directly involved in it, Ed Crafts's feeling was, "Why don't you go ahead and handle this entirely on your own? Why do I need to get involved in it? Anytime you need advice or help on contacts, who to see and so on, or if you want me to do something about it, I'll do it. But otherwise, why don't you go ahead?" This was one of the few exceptions in which legislation was handled by anyone outside of

Crafts's shop. We in Research--and I took the leading part in it--steered the proposed legislation through the channels, the Budget Bureau, the White House, and the Congress committees until it was enacted into law.

My next job was to decide which route we were going to take in getting the proposed legislation. Would we draft a bill and get the administration to send it up as an administration bill? Or would we welcome a request from a congressman or senator for legislative service, in which case it would be a congressman's or senator's bill.

While we were debating this in my office, I got a call from Congressman [Clifford Guy] McIntire. This wasn't really surprising because I had talked to some of the forestry school deans to the effect that it would be very nice if we got a request from the Hill. I'd even let it be known as I traveled the halls of Congress talking to my friendly contacts that I was thinking along the line of this type of legislation. I hoped that somebody might become interested in it. McIntire was a logical man to do it because he had expressed on a number of previous occasions a lot of interest in forestry. He was about to run for reelection, also, and I think he was glad to have a project that he could push that would meet with the approval of his constituents. Al [Albert D.] Nutting, who was dean of the forestry school at the University of Maine, was, of course, all for the idea, and I am sure he had so told McIntire.

With the request now before us from McIntire to provide legislative service in drafting a bill that would do a somewhat similar job for forestry that the Hatch Act was doing for agricultural research, we proceeded immediately to draft the bill with the help of Reynolds Florance, who was the lawyer in our outfit and who worked for Ed Crafts in his group and did all the technical legislative drafting for the Forest Service. I outlined the things that I wanted in it, and I reviewed a number of other bills, including our Cooperative Forest Management Act,* in the field of federal funds going to states to help small-ownership forest management. I reviewed the Hatch Act. I reviewed a number of others, and I took out of these acts the good points that I wanted incorporated plus a list of other things that I wanted to see in this bill.

I took a draft of the requested bill to Congressman McIntire. It was not long; he read it while I sat there. He said, "That sounds good; it sounds like this may do what we want, but I must think

*Cooperative Forest Management Act of 25 August 1950, ch. 781, 64 Stat. 473, 16 U.S.C. secs. 568c, d (1964).

about it because I want this legislative bill really to do the job that needs to be done. I've got to have the chance to study it carefully, but I'll be in touch with you." Well, not long, maybe a week or two later I got a call from him. He wanted to make a few changes in the draft of the bill, and he said that he had talked it over with Al Nutting while up in Maine. It seemed to meet with his approval with a few changes.

These were minor changes, which I could very easily agree to right there on the spot. I reported these same changes to Senator [John Cornelius] Stennis's office who was the co-sponsor of a similar bill in the Senate. I should add that right after we got the request from McIntire, I had taken this draft of the bill to Senator Stennis, too, because he'd always expressed a lot of interest in forest research. I told him what was transpiring, and asked him if he would like to sponsor the bill in the Senate. He said, "I certainly would, let me take a look at it." He looked it over and asked, "You think this is a good piece of legislation? Do you think you need this authority?" I said, "Yes, I definitely do," and I gave him a rundown on my discussions with McIntire.

ERM: Did Stennis check it out with other forestry people as McIntire had?

VLH: No, he did not. I happen to know that. I might add that my relationship with Senator Stennis was somewhat different than it was with Congressman McIntire. McIntire didn't know me as well as Senator Stennis knew me. I had been working with Senator Stennis for some time. I think he had complete confidence in my judgment about forestry research matters. When I told him it would be the same bill that would be considered by the House in its agricultural committee, the only question he asked was, "You are for this? The Forest Service is for it?" I said, "Yes, and I might add that the forestry schools and the land grant colleges are for it, too." He said, "Fine. I'll talk with Senator [James Oliver] Eastland about it. He is chairman of the Senate subcommittee that deals with this sort of thing. I'll get him to co-sponsor the bill, and I think I'll get some other senators to co-sponsor it also [Senator George Aiken, a Republican, was the other co-sponsor.] He even got a Republican to sponsor it with him to make it a bipartisan effort. So things were going along smoothly in the Senate.

I soon learned that there was a little trouble developing. I say, a little trouble, because normally with new legislation there are a lot of rather serious problems that come up. This was a

problem, but it was not as big a problem as you normally have. Somebody was raising a question about who was going to administer the act. There was objection to the Forest Service; it should not have the responsibility, probably because it was thought the Forest Service might dictate the kind of research that would be done by the forestry schools. It was the forest industries that were making this objection.

ERM: The NLMA [National Lumber Manufacturers Association]?

VLH: Yes, you could say that. Initially, it was Albert Hall, a consulting forester, who saw evil in a possible heavy influence of the Forest Service on the forestry schools if the bill were to be administered by the Forest Service. Later, however, it became Ralph Hodges, lobbyist and spokesman for NLMA, who was identified to me by the secretariats of both the House committee and the Senate committee as being the one who was adamantly opposed to the Forest Service. These committees were not in a mood to cross the organized-industry interests and told me so in final tones.

I won't say the objection to the Forest Service was Ralph Hodges's personal idea because he was, of course, speaking for the NLMA. Moreover, I understood that the pulp and paper industry group went along with NLMA on this but with less enthusiasm for it. W.C. Hammerle eventually became--during the final stages of the bill before enactment--an industry spokesman. He, personally, didn't really care how the department would delegate the handling of the program. Hammerle was with the pulp and paper interests.

Well, I told Congressman McIntire that my own view was that this act should probably be administered by the administrators of the Cooperative State Research Service, the U.S. Department of Agriculture agency that also administers the Hatch Act because both would be administered under similar policies and programs. Therefore, there would be a lot of sense that I could see in having them do it.

I had already cleared this idea with the Forest Service's top staff, and it had agreed that this probably was a wise policy. I had told them, "I think either we've got to meet the objections, or we're going to have a long delay. We'll not get this act through within a two-year span unless we compromise, and I'm not sure but that CSRS is the proper agency anyway."

I found the most serious objection in the secretary's office of the department. The assistant secretary of agriculture, who had

responsibility for all the research in the department including that in the forestry field, raised the question as to why we should agree to this. He said that, "I think you folks in the Forest Service can do a better job of defending the need for forestry research because of your greater knowledge of the forestry problems. Also, you seem to be doing a pretty good job right now of getting increased appropriations or getting more appropriations for your field than we seem to be doing in other areas of agriculture research. So why change a good thing that is going for us at this present time?"

Then I told him that, in my judgment, if we didn't accede to this request for change because of the objection, that we wouldn't get passage of the act this year. There would be a delay. That would be the least we could expect. We might not even get the legislation at all because I had been assured by both the House committee and the Senate committee that they took the objection of the organized industry seriously.

ERM: They were ready to go.

VLH: The congressional committees wanted something done about this, otherwise they were not ready to go. So when I told the assistant secretary that, he said, "Well, all right, if that's your recommendation, go ahead, we'll agree to it." So I went back and talked to McIntire then, who was going to get the House committee to hold hearings first. I told him that we had the agency administration problem ironed out within the department. There would be no questions about it. The Forest Service would not be involved in its administration; that it would be the Cooperative State Research Service.

He wanted to write this in the act, and I said, "No, why do that? I'm afraid that you'll find that the department and the whole administration will object to that." "On what grounds?" he asked. "Well," I said, "This is not customary. There had been quite a drive in recent years to get all legislation drafted so as to give authority to a secretary of a department and not below the departmental level, not direct to a department agency, because departments are constantly reorganizing their inner structures and you remove a degree of flexibility if you name a particular unit within a department to do the administering. If they should change the name of that unit or change the composition of the units, they would have to come back and get the legislation amended. But, I said, "Why not say who will do the administering in the legislative history--in your hearings on this and in your committee report that you write on it?"

Legislative history carries almost as much weight, maybe not as much from a legal standpoint, but certainly it carries weight with the department in the administration of any legislation that comes out."

Well, he asked me how we might go about that, what would be said. I told him, when the department testifies, we can make sure that there is something in its testimony that says that it is the intention of the secretary of agriculture to ask the Cooperative State Research Service to administer this act along with the Hatch Act. He wondered if we could be sure to get such a statement in the testimony. I said, "I imagine I can. I imagine I will be speaking for the department. I'm sure the department will agree to such a statement. They have already agreed in principle to it. And I think the Bureau of the Budget will agree to it if the department does, because the Budget Bureau usually does not interfere with how the secretary of a department wants to administer his responsibilities."

So that's the way we left it, and this seemed to satisfy the forest products industry. I passed this information on to the Senate committee, and it satisfied Senator Eastland. Undoubtedly, the same contact from the industry that was visiting the House committee was also visiting him. So I think he already had the story; he knew that the objection had been overcome.

We were ready then for hearings, and I had already drafted the report for the department in response to the request from the House committee for a report on the bill. As soon as that report was received, the House would be ready to schedule hearings in order to get the legislation passed in 1962. This was in the spring of 1962. We kept waiting to get word from the committee that they had received the report. McIntire was pressing me, "Where is your report? We can't do anything more now until we get that report." So I began to investigate and see what was hanging it up.

I discovered that it was still in the Bureau of the Budget, that it had been reviewed there. But I couldn't find out why they were holding it. I called the man that we had been dealing with on other research matters and asked him to find out. You see, every agency has a contact man over there with whom they deal on questions in a given area that are connected with the budgetary process. This is a way to facilitate communication amongst the various agencies in the federal government. He was very glad to try to find out what was holding up our report. He called back very soon and said, "I can tell you exactly what's holding it up--

objection on the part of the White House staff, not in the Bureau of the Budget itself."

It apparently had cleared all of the groups in the Bureau of the Budget that would review it, and they were waiting for concurrence from the White House before sending the report on up. I asked him to find out who in the White House was holding it up. He agreed to look into it. My final question to him was, "Why don't we get a conference with him? Can you schedule one so that I can appear before him and see if I can't answer his objection?" We got a conference scheduled very soon with the person at the White House who had apparently been given the responsibility to review this particular report and to confer with the Bureau of the Budget on whether or not it should be sent on up.

I took Reynolds Florance with me from the Forest Service. There were one or two more in our party from the secretary's office in the legislative service of the Division of Finance, I believe. And there were two or three there from the Budget Bureau. The only person from the White House staff was the person that had been given the job of handling this particular piece of legislation. He was a medical doctor from Harvard, as I recall. I don't remember his name. I do recall, though, that he was a very nice chap to talk to, but very adamant in his objection to our proposed way of going about the distribution of federal money to the states on problems in which there was major national responsibility.

He was very much biased toward grants on a project basis to universities who competed for the grants on the merit of the applicant's qualifications, on who could do the best job. He pointed out something that we already knew--of course, it was well-known--that the ten top universities in the United States get most of the federal grant money. There was a good reason for that, he observed, "They had the talent. There is where you get your money's worth." And he said, "Here you are proposing to spread this money out amongst all the states, and, undoubtedly, there are some state universities not near as competent as others. That's my objection to the Hatch Act. It spreads the money out on a formula basis in which each state participates. I don't think agricultural research is very efficient."

I didn't want to argue with him on that last point even though I disagreed with his statement. In my own view, agricultural research has been extremely efficient in problem solving and has produced some outstanding basic research findings. But I wanted to

talk about the McIntire-Stennis Act proposal. Incidentally, it wasn't called that at that time. At that time it was called the Cooperative Forestry Research Bill.

I told him that I felt that this proposal had great merit and that we were in a stage in the field of forestry research that we very much needed to stimulate the states to do more than they were. Many of these problems were local, and it was a great disappointment to me that the states weren't doing more than they were. We recognized they had authority from the Hatch Act to do research in the forestry field, but I didn't think they really appreciated the forestry problems. So I told him that we wanted this earmarked, so to speak, with special legislation in the forestry field to stimulate the same kind of attention to forestry problems that was going into agricultural problems. He, of course, caught me up very soon, and said, "Yes, that's the same kind of inefficiency." He had a fixation on his assumed poor-quality research that was going on in agriculture versus what was going on in the field of health, medicine, and so on, because federal grants in these other areas were made in a different way.

We argued about the merits and demerits of my bill, and, I might say, I did all the talking in support of the proposal we had, and he, of course, did all the talking against it. So this was a debate between the two of us as the rest of them were onlookers who were very much interested, but I guess they felt they couldn't contribute very much help to me. And it looked like we were about to end up in a stalemate. I felt pessimistic about the outcome toward the end of this conference.

I guess maybe I showed a bit of my disappointment, too, because the White House staffer then said, "Well, I'll tell you. I know, Dr. Harper, you are very earnest about this, and I haven't made one dent in your feeling about it in all the convincing reasons that I thought I was bringing to bear against your proposed bill." I said, "No, you haven't. I am just as much convinced now of the need for this bill as I was when I came in here. I've heard all your arguments before, and I don't believe they have merit for this particular field of research that we're talking about."

"All right," he said, "I'll tell you what I'll do. I will stand aside. I will remove my objection. You can go ahead with this legislation, but just remember one thing that I want to tell you right now, and that is that I thought I was doing you a service. One of these days you're going to remember that and wish that you had

listened to me, because you are going to be disappointed in the results. You're going to look at the poor returns and the inflexibility of the program to get at high-priority problems and say, "Surely there must have been a better way to do this than the way that we sought through this proposal." I told him that I was glad that he was removing his objection, and I thanked him for it and left.

We returned to the Department of Agriculture and said, "Everything is going fine now." I called McIntire and said, "Our report ought to be up there in a few days. I'll keep on its tail from here and see if I can't speed it up." And I called back to the Budget Bureau to ask my contact there to let me know the minute the report left, because time was getting short and the House committee wanted to schedule hearings on it as soon as possible. He reported back at the end of the day that the report had cleared and was on its way, exactly as signed by the acting secretary of the Department of Agriculture. So I reported all that to McIntire. He was delighted, of course, because this meant there would be smooth sailing.

The agriculture committee of the House scheduled the hearing on this bill with Congressman McIntire chairing the meeting. Since McIntire was a Republican in a Democratic Congress, this was recognition of his leadership in this particular piece of legislation. Congressman [Abraham P.] Grant, a Democrat and regular chairman of the subcommittee in which the bill was considered, was absent. There was a fair size attendance of witnesses and spectators. The forest products industry was well represented. Dick Preston was there as was Westveld. Senator Stennis arrived near the end of the hearings and spoke warmly in favor of the bill. In fact, there was no opposition to the bill at all during the hearings.

I testified first, as the representative of the Department of Agriculture. After my statement, McIntire grilled me on the question of who would administer the new legislation. He said for the record that he was making it very plain in this legislative history that it was the will of the committee to agree with the secretary of agriculture that the Cooperative State Research Service would administer the act. I told him that the testimony I had given was ample assurance of the secretary of agriculture's intention and that I could speak for the administrator of CSRS, also, in saying he was glad to undertake the task.

After Senator Stennis spoke and the hearings were about over, the Senator made a point to single me out publicly for

complimentary remarks about the Forest Service and the fact that this forestry research we were discussing would be in good hands with my handling it. To add to what could have been an embarrassing episode for all of us, he patted my shoulder with approval. He had missed my testimony divorcing the Forest Service from administering the new legislation and had missed McIntire's emphasis on the committee's approval of the department's plans for having CSRS do the job. The industry folks had heard my testimony and chose to ignore the implications that the Forest Service might yet get hold of the implementation of the act.

After Stennis had left, Westveld remarked to me that Senator Stennis was awfully Forest Service oriented. He wondered whether the senator would be of much help in providing funds to implement the act. I explained that I was sure it had slipped the senator's mind that the Forest Service would not be handling this cooperative federal-state research program; he probably assumed I would be managing it inasmuch as I was there testifying for it.

Moreover, to indicate the senator's interest in forestry schools I told Westveld of the plans the senator had for strengthening the forestry school at Starkville, Mississippi, at the state university located there. He had been seeking my help on suggestions of how to build it up toward accreditation and making it a stronger force in research and graduate training. He had expressed interest in all the forestry schools. My advice to Westveld was that the senator would be very sympathetic toward the new act and its implementation with funds. He could count on the senator as a good friend of the forestry schools.

I think that completes my story on this subject, with the one exception. I must conclude on the note that ten years have now passed, and I have not lived to regret this particular legislation as the White House staffer predicted I would.

ERM: How have appropriations gone in support of this?

VLH: Not very well, not as well as I would like to have seen them. We wrote in the authorization that one half the amount of the Forest Service budget was authorized as a federal money ceiling for this particular grant program. We did that on a rationale that if the states put in one half and the federal government appropriated one half, then the states' combined budget would support a program in size equal to that of the Forest Service of the federal government. This seemed to us to be a good division of responsibility between

the federal government and the states. At the present time something less than \$5 million annually is being provided in federal funds, whereas the Forest Service budget is well over \$40 million for forestry research.

The prospects seem good right now [1972] for a substantial increase soon in McIntire-Stennis appropriations. My understanding is that Senator Stennis has agreed to work toward a doubling of the size of the program as soon as possible. Former Congressman McIntire, who is now the chief lobbyist for the Farm Bureau Federation, has also indicated he will push for the increase.

ERM: How would you describe the Cooperative State Research Service? How is it made up?

VLH: It is a unit in the Department of Agriculture that reports directly to the secretary of agriculture, with a mission that is solely concerned with administering federal research funds that come to the department as a line item identified as payments to states for agriculture or forestry research. These funds are mostly on a matching basis; I think they do administer a very small part on a project basis, where the federal government bears the entire cost of the project. But by and large, the reason it is called "cooperative" is because the state is putting up at least half of the money and the federal government is putting up the remainder, and that makes it cooperative. The job of CSRS is to see that this money is apportioned to the states according to a formula which is either written into the act itself, or, at least, the general guidelines for the formula are written into the act. Then CSRS has to review programs at each state experiment station to make sure that the money is being properly used.

ERM: Isn't there only so much money each year that is available for this kind of thing?

VLH: Yes. There is a limit. Of course, this is a line item that the Appropriations Subcommittee on Agriculture and Related Agencies considers. They hold hearings on that particular line item, and as a result of the committee's recommendation the Congress may accept the administration's budget request for funds, which may have a small increase in it, or it may decide to cut that, or it may decide to add to it.

ERM: But no state is necessarily going to take its full measure of advantage of the federal monies available to it under this act. It is an optional thing. They have got to match whatever their allowance is.

- VLH: That's right, they must match it, but I know of no state that hasn't been able to match it. I think most of the states are putting in more. I think the McIntire-Stennis Act has fulfilled one of the purposes that we hoped for, and that was that it would stimulate state legislative appropriations.
- ERM: This then has stepped up the tempo of forest research across the country?
- VLH: That's correct. I think it has been a great enhancement to the teaching programs, also, at the state level.
- ERM: This doesn't touch any other institutions except state institutions, is that right?
- VLH: Yes, that's right, and, of course, this was a point that we had to make a decision on, and it was my decision to recommend in the draft that we sent to Congressman McIntire that the bill be confined to state-supported educational institutions. Not necessarily only those that had a forestry school because in some states there was not a forestry school and we didn't want to bar any state from this. Each state, however, has an agriculture experiment station that can or does research in forestry. We knew that in some states there was more than one university and more than one forestry school, and so we wrote guidelines into the act itself in which the governor would have the option to designate which universities getting state support would use this money.
- ERM: Over the last decade hasn't this strengthened the public schools over the private because it's made vast new monies available to them that are not available to the private universities?
- VLH: Well, yes. One reason why we didn't extend the coverage to the private universities was that this would complicate implementation in several respects. For one thing the private institutions would not be able to get state money for matching. All their money, as a rule, comes from elsewhere. We wanted to stimulate state public funds. The way the McIntire-Stennis Act is worded and being administered money other than state funds is allowed as matching money. In other words, you can use industry grants or even private foundation money. But we felt that real stability in the research program probably would come only from state legislative appropriations, and, therefore, we decided to confine it to that. Actually, however, most of the matching comes from state appropriated funds.

Now, I know that there are some very good private schools left out of the program. And at one stage in the passage of this act this fact threatened to disrail smooth running of the passage of the bill during the final moments. Duke University apparently had voiced a complaint to their senator [Senator B. Everett Jordan], and he raised the question with the Senate committee, or maybe it was on the floor itself, or both. Anyway, he offered an amendment while the bill was before the Senate for final vote. The amendment amended the bill to include Duke University, or, anyhow, to include certain forestry schools. The problem of which private institutions to include is another reason why we found it difficult to include the private universities, because how could you include one or two without including them all? And there were a great many private institutions and some already with forestry schools. You could dilute the program so far that it wouldn't do any good. Besides, I knew that the state agricultural research directors wouldn't stand still for broadening the bill's coverage beyond those in which they operated.

ERM: Of course, there weren't too many that were involved in forestry, were there?

VLH: No, but there were some weak ones as well as the two strong ones, Duke and Yale. Well, now this amendment offered by the senator from North Carolina did pass, but under certain rules of the Senate, a senator can recall a matter. I got in touch with Senator Stennis's office immediately when I'd heard what happened, and he already was having the whole matter recalled, and the Senate reconsidered and this time it rejected the amendment. But Senator Stennis told Senator Jordan that he was doing this in the interest of quick passage of the bill in question. If we amend this it surely will have to go back to the House, he explained. The House may object to our amendment, and we might not get a bill passed this session of Congress, he added. Instead, he suggested to Jordan that he wait until next year and seek amendment then. And Jordan said, all right. But he's never raised the question since, as far as I know. Incidentally the bill passed in October of 1962.

ERM: Once established doesn't congressional funding of an idea like this become less difficult?

VLH: Yes, and, of course, I think that's one thing upon which the White House staff based its objection, that once you establish a formula-grant program it becomes institutionalized and it's awfully hard to get rid of. Whereas, if it's in the form of a project-grant program, it's much easier to terminate or to change the whole nature of its content. And he's right. But in my view, we were perfectly willing

to institutionalize this formula-grant program because I foresaw a continuing need for research in forestry. The problems seemed acute then, and I don't see any letup yet. The problems have actually intensified in the last ten years; I think they will increase even more in the next ten years.

ERM: Over and above, of course, the obvious values it has to forestry research, it is in a very real sense an application of federal aid to forestry schools, aid to education in a sense. I presume a lot of the forestry schools now are pretty much shored up by this federal money and that this money gives them greater leverage with their state legislators when they go to battle.

VLH: I am sure that is true. It gives them a measure of stability that they never had before. I think they feel that this federal appropriation gives them more security than the state appropriations would offer without the matching requirement, and, therefore, they've now got stability on which to plan a staff. There is no doubt but that the McIntire-Stennis Act funds have enhanced the quality of the schools' staffs and the breadth of their research and teaching programs.

Incidentally, we wrote into the act a very broad scope of activities to be carried on. In other words, certainly, McIntire-Stennis wasn't a narrow interpretation of the field of forestry. It was intended to be just as broad as our federal charter is, if not even broader, because, for one thing, in the Forest Service we limit our research in the wildlife field to wildlife habitat; however, the McIntire-Stennis Act includes the wildlife animal side as well as the habitat side. And we did this deliberately, knowing that the schools were teaching wildlife sciences in a broader way than we were handling them at the federal end in the Forest Service. You see, the authority for doing research in the biological phases of wildlife per se was over at the Department of Interior in the Bureau of Sports Fisheries and Wildlife. The Department of Agriculture, and, of course, the Forest Service only had authority for the wildlife habitat research phases.

ERM: Did this cover social science research, too, if it were done within the forest school?

VLH: First of all, the act itself doesn't say which unit of the university will be supported. The only reference in the act itself to forestry schools is in the preamble where it says it is the purpose of the Congress to broaden the base for research to include work done in states to enhance the training and research programs of the forestry schools, etc., etc. Then it goes on and says these monies will be

made available to the state to be used as the governor decides, for forestry research in state-supported institutions.

Now, that means that once it gets down to the university level, there is nothing that would prohibit the university from giving some of this money to a social science project leader or scientist connected with the project if it felt it wise to do so. Here in the University of Florida, for example, I'm sure that McIntire-Stennis money goes to scientists from departments other than our forestry school--the Department of Soil because they are working on a forest soil problem, the Department of Pathology because they are working on a forest pathology problem. The scientists outside of forestry schools, however, are usually working in collaboration with scientists in the forestry schools.

- ERM: That's a question I'll have to ask my old friend Frank Kaufert, up at the University of Minnesota, whether he lets any McIntire-Stennis money slip through his fingers to other departments at the University of Minnesota [laughter].
- VLH: I must say that this was a bone of contention at the beginning that I had with some of the forestry school deans. They would like to have seen this act oriented directly to them. They would have liked to have bypassed the agricultural experiment station directors and the university president and everybody else, if they could have gotten away with it. They are a special interest group like every other special interest group. But I felt that I had a broader responsibility, and I felt that we ought to give the state as much flexibility as we could on this and still fulfill our overall purposes.

I realized that in some states there would be a tug of war between forestry schools as to which should get the federal allocation of money and that turned out to be true. It was a hard-pressed issue in Illinois, for example. That state had a real tough problem to resolve as to whether all of the funds should go to the University of Illinois at Urbana, where the long-established forestry school had a graduate research program, or whether some of it should go to Southern Illinois University at Carbondale, where they had just organized a new forestry school. However, the prospects were for a forestry school at Carbondale much bigger than the one at the University at Urbana. But they had no forestry school research underway at Carbondale at that time. It finally was resolved at the state capital level that half would go to one and half to the other.

California had a similar problem. I'm not sure how they

resolved it, but I've heard that some of the federal money goes to Humboldt State College to keep peace in the state university family. Most of it, I believe, goes to Berkeley. These were decisions we felt should be made at the state level. They shouldn't be made by the Department of Agriculture, and it's worked out very well.

ERM: Isn't there a McIntire-Stennis advisory committee? Frank Kaufert, for example, is on it. How does that function?

VLH: Yes. The act itself specifies the general composition of that committee, and it is one of the few cases in which there is a legal requirement that there shall be an advisory committee.

ERM: Incidentally, is that idea traceable, in any way, to the advisory committees you had in the Forest Service?

VLH: I think perhaps it is in part. However, I personally wouldn't have made it mandatory by legislation; I didn't have it in the original draft. I felt that this was an administrative problem and that if an advisory committee was desirable it would be up to the administrators at the federal and state levels to make that decision. If they found that it wasn't worthwhile, why, then they could abolish it. But, this was another point that the forest industries insisted on. They insisted on making an advisory committee a requirement with the added provision that half of its membership be drawn from industry.

So we had to work out a balance in the composition of the committee. We finally reached agreement on equal representation from the state and federal agencies and from the industry groups. I'm not sure of the details, but that was the idea. The CSRS does have to be careful in the selection of people for the advisory committee to make sure there are as many from one group of interests as there are from the other. I think there are seven members from each of these groupings. The assistant secretary for research in the U.S. Department of Agriculture is chairman.

I should explain that CSRS, according to the McIntire-Stennis Act, must have the advice of both an advisory board and an advisory committee. The forestry deans wanted the board idea in the bill, and I had no objection to it. In fact, that seemed wise. The board members, about five as I recall, are elected by the forestry schools in the McIntire-Stennis system and the board members elect their chairman. The advisory board, in turn, has advice from

ASCUFRO--Association of State College and University Forestry Research Organizations. All in all, as you can see, the CSRS is loaded down with advisors.

I should say that this multi-group system of channeling advice to administrators of grant agencies was characteristic at that time. You found it in the case of the Hatch Act program and in programs of the National Science Foundation. The advisory bodies were often layered, complex, and many. On the other hand, where grants were made by operating agencies with the grants related directly to the agency's mission, you did not find such an elaborate system of advisory bodies.

ERM: In light of the last ten years observation of that project, how does the weight generally line up in this? How much of the weight of the advice is cast one way or another?

VLH: It depends on the caliber of people you have on the advisory committee. I left the federal government early in 1966, and the McIntire-Stennis had been in operation since 1964, about two years. I was one of the representatives for two years on the McIntire-Stennis Act advisory committee, and it seemed to me that the general caliber of persons that we had on this committee was considerably below the caliber of leaders that we had on the federal forestry research advisory committee. I don't know why that was, except perhaps CSRS wasn't able to entice people high enough up in their organizations to take part in it. The discussions were either rather general or devoted too much to housekeeping affairs. I don't like to be critical of my colleagues, but Cooperative State Research Service did a miserable job, in my view, of presenting problem and research background material to the committee to give them something to work with. They didn't go to anywhere near the trouble that we did in the Forest Service for the in-house research advisory committee to provide background statements and to bring experts in to explain what research they were doing, so that the committee members felt that they knew what was going on, knew what the thinking was, and, therefore, they could express their opinion of research priorities, problem omissions, etc., [telephone interruption].

ERM: Do you want to add anything to that statement that you were making?

VLH: No, I don't believe it's necessary.

ERM: I wonder if you could give me an idea of the status of written record on the authorship and the development of this whole program, so that we can have this as a supplement to what you have already given us.

VLH: Yes. Incidentally, I ought to explain how the McIntire-Stennis Act got that name, first. It has been customary, particularly in the Forest Service, to name legislation after the congressmen and senators who have sponsored it. This is not true generally throughout the department, but has been the time-honored practice of the Forest Service. Usually you start with the person who initiated the bill. It is quite often a congressman rather than a senator. In this case, you put the congressman first. After passage of the bill in question, I visited with McIntire with the purpose of getting his views on a name for the law. And I said, "By the way, I'd like to see this act named after you, McIntire, and I am going to ask Stennis the same question. It ought to be known by both of your names, the McIntire-Stennis Act. McIntire was pleased, of course, and I think he expected it.

I went to see Senator Stennis, and he said, "Yes, that's all right." He hadn't done a great deal of work in pushing the bill, and he was quite conscious of that, I think. He asked, "Are you sure I deserve this honor?" My reply was, "Well, there is no one else in the Senate that has done anywhere near as much as you have. After all, you did initiate the bill in the Senate, you saved it from delay in your floor action, and so, with your permission, I would like to give the new law this name. It requires only our administrative action within the department. My hope is that it will soon be known throughout the country as the McIntire-Stennis Act." He agreed to it, and that is the genesis of the name. I took the matter up with the deans of the forestry school. They had already begun using a public law number to designate it, but they soon changed to calling it the McIntire-Stennis Act. Now it is quite generally known by that name everywhere.

Soon after passage of the act, Westveld wanted to write an article on the development of this legislation. He asked me how far he should go in involving me in its development. I reminded him of the need to be discreet inasmuch as we had strict rules against federal employees engaging in promotional activities with legislators. He remembered all too vividly a previous incident of his letter writing to department officials in which he got me in a bit of trouble by relating what he and I were up to in seeking an expanded research program for the schools. Fortunately, it wasn't serious.

Someone in the secretary's office queried McArdle about it, I think. Anyway, McArdle warned me to observe the regulations. Westveld promised to be careful about mentioning my role, but he wanted to write up the part that his own organization had in the passage of this act, and he wanted to give as much credit as he could to the deans of the forestry schools. He said that he would let me see what he wrote before it was published.

When I got a review draft of his article, I found that he had been overly restrained by my admonition. He had not mentioned my name. In my comments on his draft I suggested he could be a little less cautious about my part, and I recommended certain language that would pass muster with even the most critical monitor of federal employee behavior. His manuscript was good in the sense of doing what Westveld wanted to accomplish; namely, give credit to the forestry school deans for their good efforts and in the process present well the role of the article's author. I was pleased to see them receive the credit.

At the same time, I wonder how many readers realize when they read an account such as Westveld's how incomplete and unbalanced it might be. Had the state agricultural research directors chosen to write about their roles, it could have been far more revealing of their greater political sophistication. The very fact that they did not oppose the bill but instead quietly cultivated grass-roots political support was an extremely important factor in its passage. It wasn't the time and place for me to add material about my or other roles in Westveld's article. The result is an unbalanced picture of how this legislation came into being. But, so what? The article was good in another respect: it pointed up the increased opportunity the McIntire-Stennis program offered the schools for graduate training.*

ERM: I think that is typical. People outside the workings in Washington are brought in as supporters in the field to drum up regional and local support, and they begin to feel that they have an importance far greater than they actually do.

VLH: I am sure that's true.

*R.H. Westveld, "Opportunities for Research and Graduate Education in Forestry," Journal of Forestry 61, no. 6 (June 1963): 419-421.

ERM: I think we see this in lots of cases. There is the case of the famous Article X in the lumber code of the NRA [National Recovery Act],* which survived the Schechter Poultry Case and was adopted as part of government policy. You've got any number of people in the forestry field who today believe that they individually, or maybe with a little help from somebody else, are the author of Article X.

VLH: Yes. And don't you think we tend to encourage credit taking by our helpers? I am sure I have encouraged this sort of thing on many important undertakings. I think many of us realize that much of the success of a project depends on giving participants an opportunity to gain visibility for their part in it. I was happy to see the forestry schools start developing political awareness even though they hadn't come very far. Recognition is good for morale. It is better they get too much credit than too little.

ERM: You encourage them to take credit because you might need their help again.

VLH: That's part of it. Part of it is that you are very grateful for what they did anyhow. I felt that way about the forestry school deans; they had helped, and credit for what they had done was good for them. As a matter of fact, had my own role in the development of the McIntire-Stennis Act been spelled out in detail while I was still active in Washington my usefulness would have been greatly diminished. This would not have been because I had engaged in wrong-doing. There may have been some rules bent, but the damage comes when contacts dry up because of publicity or breach of confidence. And then, too, there is the matter of protecting one's current trade secrets. Most of us get to know pretty well the rules and regulations in regard to adhering to administration policy and to avoiding political interventions that can be embarrassing. We learn how to live within the rules and still get done what we need to do.

Congressional Lobbies

ERM: The ground rules that you are speaking of have to do with government agency officials actually pushing a bill through Congress?

*National Recovery Act of 16 June 1933, 48 Stat. 195.

VLH: Yes. I forget what they call it now. But I think it is the Hatch Act; there happens to be another Hatch Act. It is a prohibition against a federal employee engaging in agitating for federal legislation unless one is speaking for the administration. You're not to do any lobbying. The Forest Service is under stricter rules by congressional legislation than many other agencies going back to the Pinchot era when so much attention was drawn to the fact that he was very influential and it looked as though he was using the newspapers to further his own programs, including pressure on Congress. So there was prohibition against the Forest Service using the newspapers or the communications media in general for distributing information of any kind, except that dealing with their own authorized program, certainly not for anything promoting their views on the kind of legislation needed.

So we had to be rather careful. There are always ways in which you can do the things you want, providing you know all the rules. One rule that we had was that when a congressman or senator asked you a direct question, you were obliged to answer it. It is not difficult to find ways to get them to ask questions, and, of course, everybody knows that. But if you get caught in the act of stimulating such questions, it might be embarrassing, to say the least.

ERM: In other words, if you got caught in setting up your brief with them, you'd get called out.

VLH: Yes. The same rule applies to appropriations or new legislation--any dealings you have with the legislative branch.

ERM: Yet aren't there tried and true friends in Congress for every branch of federal service who, in a sense, act as the friend in court?

VLH: Well, yes. I'll go further than that and say, if the congressional contacts with the agencies who are doing the actual work of running the programs were cut off, the legislators would lose a great source of information that they just have to have in order to do their job well. They were always calling upon agencies for help on this or that. So they welcomed your coming to them, and they often times were eager to do whatever they could to further programs of interest to them and their constituents.

ERM: Just as they call upon the lobbyists.

VLH: Yes.

- ERM: I know one lobbyist in the California legislature, Bill [William R.] Schofield, who is constantly referred to by his lobbyist group as the third House in the state legislature.* He thinks of himself in terms as of being a very honorable part of the whole process.
- VLH: Actually, they deserve a place there because it is a tremendous source of information for the legislators. I have heard eminent senators like Senator Margaret Chase Smith, who had a fine reputation in the Senate, say that she welcomes lobbyists coming to her office. They are a fine source of information even though slanted. But she wants to study that information and use it as she thinks best, not just do a friendly act for the lobbyist. She said, "I hope we're never cut off from special interest groups who come here with problems or with professional lobbyists who come here with their problems, because somehow they have gathered together a large source of information." And they do; they spend a lot of money gathering statistics and gathering value-judgment views supporting their cause. If you want to know all the points of view, bring in the lobbyists from opposing camps and you're going to get it.
- ERM: Yes. I suppose that the big danger is that some groups are better able to sustain large-scale lobbying activities than others.
- VLH: Well, that's what has given the edge to the commodity special interests, because they have had more money than, say, a citizens' organization, who is hard put to get enough money to pay a staff to perform a few services for the organization. The forest products industry, chambers of commerce--anybody who represents industry--can usually find the money to do a lot of pressure-group work, including financial support of political candidates for the presidency.
- ERM: I suppose, too, you have to look at their statistical evidence with a critical eye.
- VLH: I am sure that legislators realize that, and if they are swayed toward one lobbyist or the other, it is for reasons other than the quality of the statistics; it could be because he is a friend, moneywise, to the

*William R. Schofield, "Forestry, Lobbying, and Resource Legislation 1931-1961," typed transcript of tape-recorded interview by Amelia Fry, University of California Bancroft Library Regional Oral History Office (Berkeley, 1968).

party, to the campaigns that have to be waged. Or it could be a feeling that he is representing an emotional point of view that is more widespread than some other opposing view. Most of the legislators have to think in terms of politics, in terms of getting reelected; otherwise they can't carry on. They are in the same box that private industry is, except in a different context. If industries can't make a profit, they can't stay in business. Legislators can't stay in business unless they get elected and reelected.

Resistance to Controlled Burning

ERM: Isn't it true that whenever one group makes hay with its research, by so doing, it seems to be trampling upon the toes of other elements within the family, and there is certain reluctance to accept this?

VLH: I think this is natural. I think it is inherent in any large complex organization that changes don't come easy to all concerned. There is a period one must go through, and those who advocate change are inclined to be impatient that there is so much resistance. Those who resist get very impatient with those who push vigorously. We got into sharp differences in the field of controlled burning, which you may recall. The establishment, if you want to call it that, in the Forest Service was against use of fire in any form for many years for policy reasons. Regardless of how much benefit that people in research found from use of fire for forest management purposes, the cost in terms of likely damage from those who would misuse it was considered by national forest managers to be greater. So they were reluctant to change policy.

Some of my first research in the Forest Service that we talked about was in this field of prescribed burning. And I got into it logically from naval stores. My first job was research on naval stores practices, trying to make the current practices less damaging so that a tree could live through the experience of being turpented to become available for later removal in a logging operation.

It was necessary to rake around each tree in the then current turpentine operation in order to protect it from accidental woods fires. You couldn't take chances on getting wildfire there.

If wildfire got to the turpentine face on a tree, which was corroded with what we called scrape, that is, the hardened oleo resin, the result was a lighted torch. And, of course, the intense heat killed the tree outright. On the other hand, you could burn over the woods of carefully raked trees and not harm the timber. Starting with that fact, we thought that there must be wider benefits from controlled burning, particularly for the purpose of fire protection because, as we could see in the naval stores orchards, there seldom was damage even to unraked and unturpented trees. It was only in areas of heavy rough* that you got real heavy mortality of timber when wildfire occurred.

Also, there was another reason for light, frequent burns. There was the matter of grazing. I suppose all forest land in the southern pine belt was used to graze cattle at that time. It was all free range when I first knew the country, and the cattlemen had learned through long experience that unless they had a light burning, they had very poor grazing for their cattle. So they wanted to burn frequently, usually annually. The wildlife people, hunters, especially of quail, wanted to burn, too. This improved the quail habitat. So there were a lot of reasons for keeping down the shrubs and removing the dead grass. Therefore, we started controlled-burning experiments, which finally provided the scientific basis for prescribed burning, a practice which is pretty generally used today in the southern pine region.

I think the turning point in policy on the use of fire in the South came, oh, not until about 1945 or perhaps a little later. Lyle Watts was telling me about it in 1951 during our trip to Rome to attend an FAO [Food and Agricultural Organization] conference. We had ample time to visit. I had been telling him of my research experiences in the South and of the reluctance of the forest supervisors and the state foresters to publicly admit that controlled burning had merit.

He thought this objection to burning had now been changed. It seems he had visited the Osceola National Forest, the locality of much of my research, while I was stationed at Lake City. He observed the heavy rough in the woods and asked the forest supervisor what would happen if wildfire got to it. He was told that

*Rough is, according to Dr. Harper, a local term meaning accumulated understory growth of herbaceous and woody plants, which made a flashy fuel.

the fire protection organization was good, that it could handle any fire. "You don't believe in prescribed burning?" Watts asked. The supervisor's answer was, "No, not for fire protection purposes."

Watts had been briefed before his trip by someone who thought he should look into the fire protection situation. His attention was called to the claim by researchers--and I was one of the researchers mentioned--that the dead herbaceous and live woody undergrowth would eventually accumulate under a regime of fire exclusion to the point where it would be impossible to prevent heavy fire damage over a large area in the event of wildfire on a day of extreme fire-danger weather. We had placed this critical point in the accumulated rough at between five and seven years for flatwood conditions, the soil and terrain conditions of the Osceola forest.

Well, the next day Watts and the supervisor drove to the Ocala National Forest. On the way back they saw a big smoke cloud in the distance ahead. Lyle Watts casually remarked, not thinking it to be really true, "There goes the Osceola up in smoke." Unfortunately, it turned out to be all too true. The day was one with a heavy wind and there had been a prolonged drought. Fire got away and burned over almost all of the Osceola National Forest.

The next morning, according to Watts, he sat in with the supervisor and district ranger in their analysis of what went wrong. Watts asked, "I wonder if it isn't time that we take a good look at what the advocates of controlled burning have been saying. Hasn't there been research in use of fire for protection purposes by the experiment station folks at Olustee?" "Oh yeh, yeh," they responded without enthusiasm. "There was work done on use of fire on the Olustee Experimental Forest," they added. After a pause, and without further comment by Watts, they continued, "Well, maybe we better get the research reports out and take a look at them again."

After Chief Watts got back to Washington, I was told, a top staff meeting was called. Watts said to his staff, "I think we've got a problem on our hands. The time is overdue for us to change the policy of total fire exclusion in the South and perhaps elsewhere. Let's consider getting a letter out to all regions saying that, as far as this office is concerned, we'd like to have them consider the use of fire as a tool of forest management wherever it is felt to be wise from research and pilot testing work."

This story by Watts is an illustration of how changes in administrative policy can come about. In this case it was on a subject debated for several years, and then came a dramatic demonstration of the wisdom of change.

Research and Activism

ERM: What about the controversy over Ashley Schiff's book?*

VLH: Yes, of course, there are things in Schiff's book that I question. I consider his was a poor way to do research on material for his book. Had it been done, say, in my own group, I would have condemned it as being an incomplete, inadequate job because there was too much selection of the material that he used and exclusion of the material that he didn't want.

In other words, he was doing much of what he was accusing the Forest Service of doing in the fire control field. And, also, the generalization to the effect that any research done by an agency, whose main mission is program operations, is apt to be so controlled, biased, unobjective, that it's no good, I couldn't agree with. I think I was quoted in one place in his book, but only quoted in part and not in context. Other parts of his text showed similar deficiencies in regard to other people.

But, at the same time, there was some truth in his story. Yes, to be sure, the research station people in the Forest Service had done a lot of research on the use of fire, and it was not accepted readily by the action program end of the Forest Service. Moreover, the people doing the research in the Forest Service weren't making as much noise about their findings as were others. We were quietly going about the job of doing a rather complete investigation, as we did, for example, on the effects of fire on soils. We felt that we had to know a great deal about these and other effects

*Ashley Schiff, Fire and Waste: Scientific Heresy in the Forest Service, (Cambridge: Harvard University Press, 1962.)

that are part of the total picture. We published our results probably in a way that the general public didn't see them, in other words, in a way that wasn't connected with controversy.

But there were others that were willing to go public with very little data, make a big noise, and I would say H.H. Chapman was one of those. Along with other fine qualities of H.H. Chapman was a certain missionary zeal; he liked to get ahold of anything controversial and fan the flames in the hope, I suppose, of forcing a settlement of the issues. And he had definite ideas, too, on what should be proper settlement. He often pointed the finger at the Forest Service and also at the states for their forest fire protection policies. The states were in the same boat as the U.S. Forest Service on this question of burning in the South. They didn't like the idea, either, of countenancing frequent light burning even though under controlled conditions, for fear that the public would not understand the difference between prescribed and wild fire.

ERM: Do you think there is any validity in the accusation that research for the Forest Service or other government agencies sometimes gets quashed when it disturbs the established mythology of the agency?

VLH: I would say there is truth in the accusation to the extent that there is a tendency for the stronger organizational elements of an agency to exert power over the weaker elements. Unless an organization sets up its research independent of the direction for the action programs and mans the research with strong leaders who understand the research code of objectivity and the need for freedom to report their results and resist any attempt to quash research, there is apt to be undue control of in-house research undertaken and of research results reported.

I have heard, although I don't have first-hand knowledge of it, that the research work of the Soil Conservation Service became controlled and slanted in support of its field operations. The research and the field operations were under the administrative direction of regional administrators, as I recall, an arrangement abandoned by the Forest Service in 1915. In the late forties or early 1950s the research work was moved from the Soil Conservation Service to the Agricultural Research Service.

In general, the Forest Service has maintained a healthy respect for one another between the research and national forest groups beginning with Earle Clapp's direction of research and his

insistence that the research organization was to be independent of national forest administration. Yes, I experienced pressures at times to quash research by harassed, and perhaps even frightened, administrators over embarrassments caused by research reporting. And on occasions I have had harsh words with some of my Forest Service colleagues in the national forest administrative branch over what I regarded as attempted abridgments of our freedom and independence in research.

Nevertheless, insofar as I know, our research was not controlled at any level by other than research directors while I was chief of Research. We were influenced, to be sure, by our colleagues in the action program on problems they considered important for research people to work on. But the decision was up to the researchers as to how best to tackle the problems and how the research should be carried out.

Also, I can say that we were inclined to be conservative and careful about reporting research results in sensitive areas for fear of causing undue difficulty for national forest administration, or for state and private forest managers, too, for that matter. In other words, we tried to be responsible research scientists, with an attitude of helping to solve problems, not to create more problems, for the action-program administrators. Our restraint in loudly shouting our results on use of fire for management purposes--at times not as much restraint as national forest leaders would have had us use--is a case in point. We did not get on the big white horse to lead a campaign of influencing the professional community that policies of outlawing controlled burning were bad.

At the same time we did, however, discuss our research results and their policy implications with Forest Service and other administrators of forest land. We understood their reluctance to give up preaching forest fire protection without qualifications until the scientific and political evidence was compelling. It was the net benefit that counted.

There are differences of opinion being expressed today about the role of research scientists in leading campaigns for causes. There are some public figures, such as Stuart Udall as reported in published material, who feel strongly that scientists should become deeply involved in speaking out against environmental degeneration and in pushing policy views on the public decision makers. He roundly criticized the National Academy of Science for its wrist-slapping of certain scientists because they had engaged in hyperbole, according to the academy, in public discussion of

environmental problems in the light of alleged scientific knowledge. He even threatened to ask that the academy be investigated by Ralph Nader for its lack of independence on questions of public policy.

We will always have H.H. Chapmans and Stuart Udalls around, and they perform a public service as crusaders for causes. They should not be emulated, however, by scientists wearing the mantle of science. If scientists wish to crusade for a specific policy position they should wear their citizen hats. In this capacity there is need and ample opportunity for them to be activists. Most policies are based as much or more on value judgments in which emotion plays a strong part than on proven scientific findings.

This is not to say that scientists haven't any role as scientists in influencing public decisions on controversial issues. In fact, they have a very important role that in my judgment they do not fill often enough or adequately enough. Their role, as I see it, is to do research, first of all, on policy-related problems and then take the results of their analyses and evaluations of alternative policy actions to the counseling table where the policy decision makers can get the scientific and analytical inputs to weigh in along with less analytical and factual views from others before taking decision. This counseling role is a far more difficult one to fill than that of advocate and not very attractive to the professor-scientist wanting public attention.

We have some professors in this and other universities who are now engaged in hyperbole, who exaggerate in sweeping generalities that are even less than half-truths, on issues connected with environmental quality. And they do this posing as professors and scientists representing the scientific community. They do a disservice to the scientific community. They would be just as effective, if not more so, if they represented themselves as concerned citizens and members of a pressure group--a group that deals in emotions and which is expected to slant facts as reasons for its views.

ERM: One wonders sometimes whether leadership in government agencies doesn't get cemented in certain policies or certain directions in which a lot of time, money, and manpower have been invested. It is rather reluctant to shift the great gears in other directions. I just wonder what would happen if somebody came out with a real sociological study--a public opinion study--that showed the course of

public interest was turning away from the Smokey Bear image of the Forest Service. It would be a pretty hard thing for some people in the Forest Service to swallow. It's hard to change directions, and good hard research in any area puts the needle into a given established policy. I just wonder to what extent that kind of research is sidetracked or quieted?

VLH: Yes, this could happen, particularly if the research outfit becomes too agreeable with the program policy makers and puts high priority on being members of one big, happy family in which debate is often-times mistakenly regarded as discord with interest to make mischief. I'd say that there are subtle influences at work in most organizations--unintentional perhaps--that discourage research that would challenge policy. These forces are in the form of togetherness and harmony preached from high authority, in the form of rewards for good behavior and a popularity with committees who pass on achievement performance, and so on. These forces probably have always been at work in the Forest Service. I experienced them particularly when chief of Research during the 1950s when it was popular doctrine to be popular with everyone in the organization. I feared the weakening of our research so much during that period that I probably tended to overreact in a show of independence for our researchers.

On the other hand, I don't recall a single instance of flat denial of research proposed or of research results to be published from official action. As chief of Research I did not assume that anyone outside of the research group, anyone that is, below the president's and Congress's purse strings, had a right to dictate what the research performance should be on. I neither asked for or received official approval of how research was to be set up and reported. I don't think any member of the top staff thought that Forest Service research should be controlled by other than research directors, although some could be pretty sarcastic about researchers when their policies got called into question, directly or indirectly, by the research results. Station directors were more likely than other research administrators to feel the sharp bite of criticism aimed at discouragement of research publication.

I recall when I was director of the Northeastern Station that I received a caustic review of a proposed publication by the station on the use of fire in the management of pine stands in New Jersey. We were required by Forest Service policy to submit a proposed publication of results of research on sensitive or controversial subjects for Washington office review. The intent

of the policy was good; it was to avoid surprises and assure constructive criticism. It occasionally worked to delay publication, however, or to water down the impact of the results with hedging qualifications, a consequence that most research directors hate, and I was no exception to the rule. The review letter was signed by Chris Granger as acting chief and said, among other things, that the "research work appeared to be superficial and barely warmed through," or words to that effect.

Later, when I deplored such foot-dragging on the part of the Washington office to Ed Kotok the then chief of Research, I got added rebuke from him. He too thought the research poorly conceived and the results no doubt in error. He wondered whether our station had come under the influence of H.H. Chapman at Yale. With that I blew my stack to Kotok--with whom incidentally, one can get away with temper reactions. I knew that Ed Kotok was not a career research scientist; he had come to research as a station director from the national forest organization and had authored a bulletin then that shot down, without research evidence of any consequence, the concept of light burning in California. So I proceeded to defend my academic rights to report station research results that were rated as soundly come by, by competent scientists in the field in question. I was willing to take suggestion on editing of presentation so long as the substance wasn't altered. But I reminded him that the subject of fire, carefully controlled, as a silvicultural and fire protection tool for use in pine stands had been worn thin by repeated experiments showing similar beneficial effects and that I was in no mood to stand still for the kind of comments that were coming from entrenched interests in the Forest Service or elsewhere. Kotok, as was his character, quickly turned into the father figure, giving me soothing advice and comfort with words hard to make sense out of but with intentions clearly evident of meaning I was not wholly wrong.

Not to prolong this story, I decided after rereading the proposed article on fire use to ask the authors--a station scientist and a state forest service official--to rewrite the article in better scientific form. My decision to request this was influenced more by lack of a masterly job of writing of the results than by the critical reviews of the results. My request met with understandable disappointment and some resentment from the authors. It wasn't long before H.H. Chapman heard about the delay and proceeded to make the most of another instance of Forest Service suppression of fire truths. He was right about the delay but never knew about the fight to prevent it.

Now, let me say that instances such as the above were not frequent in the Forest Service. I don't deplore their cause. It is a healthy sign when policy decision makers for national forest programs can sharply question the validity of research results or inept reporting of them in publications. It keeps the scientists in touch with reality and mindful of good research technique and reporting. But it doesn't encourage in-house research on problems of established policy. If I were to live over my fifteen-year term as chief of Forest Service Research I would more aggressively seek problems that were policy oriented and make more use of grant research for some of them. Research by outsiders, if competently done, has a number of advantages. It assures objectivity in the context of a detached view of problems and of impacts in agency policy. It dulls the charge by outside critics that in-house research is probably biased; a charge oftentimes made by pressure groups. It adds weight to the in-house research influence on policy makers.

And a final comment on your question. Our custom, as I think I've said before about Forest Service research, was to respect the need for policy and program decision makers in national forest administration to carefully weigh the evidence, scientific and otherwise, before they made changes in programs for which they and not researchers were held responsible. Our research policy was to report the results as honestly as we knew how, be willing to discuss policy implications, but not publicly campaign for a particular change. At the same time we took care that results of our public research were made public.

I think the position of the top staff of the Forest Service has been that it wanted to see the results of research and if the results were conclusive and a change in course of action justified by other criteria as well--intangibles, political, public relation, etc.--then the chief's office put the weight of its authority behind a changed policy.

ERM: Getting money for research in the Forest Service for some of these different areas came rather hard, did it not?

VLH: Yes. I was always a little hesitant when I had the responsibility of presenting the research budget--as part of a team in the Forest Service, which went before the Appropriations Committee--as to how much identification should be given to problems as separate lines of research. I started out on the basis that the least identification on individual lines of research the better off we were. I finally departed from that policy, however, and decided that we should emphasize as line items research in all five of the major uses:

timber management, range management, watershed management, outdoor recreation, and fish and wildlife habitat. We organized five divisions or branches of divisions to handle these, and I did the coordination between research units. Well, now, to be sure, some of these uses had less appeal than the others, but there were ways you could get around that in efforts to achieve a balanced research program.

For example, in the middle and late 1950s, I found that by working with leaders in Congress and their staffs that there were approaches to increased research appropriations in which the identity of not-so-popular items was not stressed. One of the approaches was to have a five- or ten-year projected plan of the research needed in general terms with forestry laboratories to be constructed.

Senator [John C.] Stennis was an advocate of this approach. He wanted to see the total plan, see what the target was we were shooting at. And he kept close watch on progress we were making toward that goal. He made speeches on the floor of the Senate in support of the research plan and regularly appeared before the subcommittee that handled Forest Service appropriations in support of increases.

Another approach, related to the first and really with its origin in suggestions by Senate staff men, was to first request laboratory construction funds for given locations and then once a laboratory was completed then to ask for staffing funds to put it to maximum use. We used our research plan to guide the balance of research among problems of various uses and the related research in forest protection, engineering, products, and economics. Many of our new laboratories were for special purposes such as for tree genetics, forest products, fire control, insect and disease problems, silviculture of hardwoods in a given region, etc. But some were general purpose laboratories for which we had a relatively free hand in allocating increased funds for staffing among uses.

Senator Stennis and Senator [Robert Carlyle] Byrd of West Virginia were strong advocates of laboratory construction. Senator Stennis was a supporter of forestry research facilities nationwide. After I explained to him how inadequate our research facilities were he made a trip to look at some of them.

When he came back to Washington he said he wanted to make a speech, or speeches, on the subject and wanted my help on

material for it. In his speech he brought out that the Forest Service's dedicated scientists "were working under very inadequate conditions, oftentimes in nothing better than an old shed." He said, "I want to see it made possible for them to have modern laboratories, and I propose we start a program of building the needed laboratories wherever needed and as justified by the Forest Service in a ten-year plan." These may not be his exact words, but they are not far off.

As a result of these approaches plus excellent public relations work on the part of the Forest Service's regional research directors, we moved rapidly toward research expansion and a better balance in our total program.

ERM: You had the waterfront pretty well covered.

VLH: Yes, and we had a well-trained research staff.

Research and Environmental Quality

ERM: You covered the waterfront in research pretty well, but did you envision some of the demands that were coming on you?

VLH: We tried to look at what was coming up in the next five years, particularly, and even as far as ten years ahead. We foresaw additional problems in the watershed field; additional problems in the outdoor recreation area; certainly more emphasis on wildlife habitat, on wildlife generally. We foresaw, I thought, less growth in our timber problems. We were farther ahead in that area than we were in the others. We were pretty far along, also, on range problems, and so we were throwing much of the future emphasis toward the cultural benefits.

Where we missed in our anticipation of future problems was the current tremendous concern about environmental quality. For example, natural beauty and the impact that clear cutting may have on the way people look at the forest. Had we had a better reading on that I think we could have devised a different research balance. However, we did build into our long-range plan the flexibility for change, so it should have been a simple matter to shift gears as fast as new problems became evident. My understanding is that considerable shifting of emphasis is going on in the research branch at the present time. Perhaps these changes in orientation of programs have come too slowly, however, at least this seems so to me as I look back over the last several years.

FOREST SERVICE DEVELOPMENT OF MULTIPLE USE

Early Commodity Orientation

ERM: In the early years of forestry development the great emphasis, of course, was put upon the commercial aspects of forest land management. When do you see the first beginnings of a change over from that?

VLH: You are asking, I presume, in reference to national forests, particularly. On private lands there has been no change, in the main, from emphasis on commercial aspects of management, of course.

According to what I have read, there is evidence that a real change over toward a balanced management of the national forests began in 1970. Prior to that time I would say that management had been heavily oriented toward timber production and harvest on a sustained-yield basis. I don't agree with the current charge being made by a number of interests, noncommodity interest groups, that the emphasis has been so great that other uses have been ignored by the Forest Service. On the other hand, I would say that there is too much truth for comfort in the charge that there has been more lip service than actual practice of multiple-use management.

Some uses, you understand, can be provided for fairly adequately in a secondary position relative to timber production and harvest, especially if demands for them are not peculiar or heavily pressing. This secondary place has been the situation with respect to watershed protection in most areas. Care in laying out logging roads and their treatment after logging is over and keeping log-skidding out of the stream beds were often all that was required in order to protect watershed values. In a few areas, however, such as in Arizona and southern California in the late 1950s, the watershed use became more demanding, shifting to the need for a higher water yield as well as for safeguards for erosion-free water quality. In these areas water was given primary consideration and national forest timber harvest and other vegetative manipulations were made to serve increased yield of water in usable flows from the watersheds.

Much of recreation can be provided, also, without much sacrifice to timber yields. Here again, unless the recreational demand is peculiar and pressing, it can be provided in an accompanying position to timber use. If it is in the form of wilderness, it would, of course, be in direct conflict with timber use.

I suggest that a fair assessment of our Forest Service policies for the national forests, as well as of the attitude of the forestry profession generally, is that they have been heavily timber oriented.

ERM: Several generations of foresters have been educated along lines that would support that general frame of reference. Isn't that true? Isn't it going to take time to adjust the balance, in just the manpower alone?

VLH: Yes, some of the reason surely goes back to the way that forestry professionals have been trained. The sort of curriculums that these schools have had gave main emphasis to timber management. That is only part of the reason, however, for the national forest orientation to timber sales. Another part of it is the way in which the public agencies get their appropriations and the high priority which the funding bodies--it could be the Congress or the White House--put on those things that can bring in revenue.

About the only use of a national forest that returns substantial revenue is timber. So it often got favored treatment, especially when it came to making timber sales; not so much for tree planting or timber stand improvement. But anytime the Forest Service could say that it could sell a billion more feet if it had X more money, it was apt to get that money because that's revenue in the treasury. And so budget bodies to which these budget requests had to go and appropriation committees, which must pass on budget allowance, all were biased toward funds for those activities that returned revenue.

For a long time regarding outdoor recreation there seemed to be a feeling on the part of the Congress that, going back to the protestant work ethic, this is play and why should we provide picnic tables and campground cleanup and that sort of thing for people who just go into the forest to have fun? Congress and others in government eventually got over it, but it took awhile for the people in general, including our legislators, to get rid of the strong reluctance to provide substantial funds for activities that were nonproductive of material goods.

Emergence of Research in Recreation

ERM: Certainly, the Forest Service began back in the twenties to think somewhat seriously about the recreational needs. Do you recall the beginning of interest in recreation?

VLH: You're absolutely right on that. My first real intellectual experience in this area was in connection with a conference called about 1939, I think it was, on outdoor recreation. The Forest Service at that time was trying to resolve some of its problems of classification of land and firm up its wilderness policy. They had a wilderness set-aside policy, but they wanted to polish it up a bit by establishing size and other criteria that would distinguish between a wild area and a wilderness area. Also on the agenda was a discussion of primitive areas, that is, those areas of national forests that wouldn't be reached by logging for a long time. Then we also got into problems of camping and picnicking.

My particular assignment had to do with problems in need of research. However, I sat in on all of the discussions. Certainly, this conference was a serious attempt on the part of the Forest Service to bring recreation use into a more prominent place in the scheme of multiple uses of the national forests.

ERM: That was in 1939.

VLH: Well, it was about then, because I moved to Washington in 1937, and it was before I went back to school at Duke. So it had to be about that period. Incidentally, there is a book out based on that conference. You probably recall it. It was edited by Russell Lord.* I am listed among the thirty foresters who allegedly authored the book. Actually, most of it was written by Russell Lord.

Just to show the low priority given recreation by the country generally at that time, I recall the ridicule leveled at parts of the book by some of the book reviews. I say, by some reviews, because there were favorable ones. Russell Lord was a good writer, a respected author by writers. The critical reviews lost no time in

*U.S. Department of Agriculture, Forest Service, Forest Outing by Thirty Foresters, edited by Russell Lord (Washington, D.C.: Government Printing Office, 1940).

finding their way to legislators on the Hill, sent by outraged constituents, I suppose. One of the senators gave the Forest Service a dressing down about wasteful expenditure of funds on a questionable use of the national forests. He read from a book review a quoted passage from the recreation book that described a swimming party. It had to do with girl pinching, giggling, beer drinking, and the like. The senator made it plain that he looked with a jaundiced eye on use of the national forests for partying.

ERM: A little frivolous?

VLH: Definitely frivolous, yes.

ERM: Hadn't the CCC had some impact on the thinking of people in the Forest Service and the Congress relative to the development of recreational potentials in the national forests?

VLH: The CCC came along at a time when it was useful to put it to building campgrounds and that sort of thing, because this was the sort of thing the CCC boys could do. And I think the Forest Service quite rightly felt that the time was coming when a great quantity of recreational facilities would be needed and it had better get the backlog of work out of the way as far as it could. I don't know that the CCC activities had any particular influence on the formation of new policies. I think they were a result of existing Forest Service policies. Certainly, they gave a leg up on the job of providing for the hordes of recreationists that began to descend on the national forests in the 1940s, right after World War II.

ERM: There would have been a lot of problems for the Forest Service and the National Park Service if a lot of that work had not been done in the thirties.

VLH: Yes, their problems would have been more difficult. Also, it gave experience of building facilities, and the agencies took advantage of what could be learned. They found that some facilities they had built just weren't durable and that some had been more costly than needed. So they gained, I think, considerable value out of the experience, in addition to furthering the program of building needed recreational facilities.

ERM: Who do you see as being the real thought leaders of the Forest Service, and perhaps outside of it, who were beginning to move in new directions other than just the timber management lines?

VLH: Those who come to mind quickly are Bob Marshall in Forest Service recreation; [Herbert Lee, Sr.] Stoddard, a wildlife biologist in private employ in the field of use of fire in southern forests for management of the quail habitat; Reed Bailey, whose classic work was on how to stop the mudflows from the Davis County, Utah, watersheds; and Ed Munns, Ed Crafts, and Sam Dana, who were advocates and promoters of uses other than timber.

Most of the thought leaders were researchers that I have named or were in research at some time in their career. Many of the new ideas come from researchers. I won't attempt to be modest here. I think that people in research are due a lot of credit for leading the way on these other uses by the kind of research they undertook. Of course, this was their job, but you could say they were doing their job well. One of the great values, as I see it, of a public agency like the Forest Service is having a research arm.

Take the matter of watershed management. I would say Ed Munns played a leading role by promoting the importance of the water values and persuading the chief of the Forest Service to create a separate Division of Forest Influences Research, which Munns headed. This was split off from the Division of Silvics Research about the time I arrived in Washington in 1937. As to recreation itself, I started research in the field of outdoor recreation, probably the first really organized systematic program in that research area. It wasn't easy to get it started.

ERM: When would you date that?

VLH: I would say that we started seriously thinking about this about 1954, about the time that we organized an advisory committee for research. We were fortunate in having a very fine group of men on that advisory committee, including Sam Dana.

ERM: Who were some of the others?

VLH: Well, let me think.

ERM: This, of course, can be retrieved from the records. I'm just curious to know who you believe some of the others are.

VLH: Yes. Well, who is the man out in California, he may be retired now, who was the commissioner of fish and game in the course of many years? A very strong leader in the field of wildlife. I can't think of him right now. Oh yes, It was Seth Gordon. I'm sure if you give

me a little time I could think of all of them, but Sam Dana comes to mind first of all because he was the chief proponent of recreation research and Seth Gordon was his main ally in the idea. Their question was, "Why aren't you doing research in recreation?" As I recall, my response was, "Well, we have thought about it, but this would be an awful hard thing to fund with the Congress feeling the way it does. And I'm not even sure that I can get my colleagues in the Forest Service to consider that it should have priority over something else."

ERM: I think that could be said of almost any new idea that comes forth.

VLH: Yes. But I toyed with the recreation research idea for two or three years, trying this and that way to raise funds for it. I remember I finally decided that there was one way in which I could get it started, and I wouldn't have to ask anybody because it was within my own authority to shift a certain amount of funds between major fields of research, that is, take some money from other activities within the limit we had. Congressional committees by custom had allowed us to take up to 5 or 10 percent from one activity and put it in another, and I felt we had sufficient justification for shifting money in this case without asking their permission.

Inasmuch as the shift in funds was for the purpose of starting a new research activity there was some question on our part on how the Congress would view it when the auditing revealed the new research. However, nobody ever raised a single question about it. So that's how we got started on recreation research. It wasn't a very big start.

The next year, why, I tried a budget line item. I was asking for a small increase in recreation research. There were a lot of misgivings about it in the Budget Bureau. Our Forest Service budget folks said, "Oh if you can get it through, fine. But we don't think you're going to succeed." "Well, I'm gonna try it." It got to the Congress, and since it wasn't a very big item it stuck. From then on we kept inching up each year. So it is now quite a substantial item. That is how we got underway with research in outdoor recreation.

Sam Dana helped point up recreation problems. I asked him to take on the job, with a grant from the Forest Service, of preparing a problem analysis in the field of outdoor recreation. He worked a year on it as a consultant to me as chief of Forest Service Research. He traveled all over the country talking to a lot of people about the problems. I feel indebted to him for laying out the parameters of the field and giving us a critical analysis of the problems most in

need of research. He did a very thorough job, and in the course of his study he talked to all the regional foresters and to the chief and staff.

After he had completed the research problem analysis, Dana talked to the chief and top staff about the need for more emphasis on recreational-use management in the national forests. He thought both the research and the action programs in recreation management should be greatly accelerated.

I'm not sure that Sam Dana influenced the national forest administration in action programs as much as he did me on the research needs. The Forest Service did begin to increase its manpower attention to recreation on national forests very soon, however.

I believe much of the idea for this increased attention as well as the motivation for getting underway with it came from the National Park Service's Mission 66. Translated, Mission 66 means a mission of catch up by 1966--ten years from 1956 when initiated--in construction of roads, campground, picnic, and other recreation facilities in the national parks. The counterpart of Mission 66 for the national forests became Operation Outdoors in the Forest Service budget. For a few years real substantial increases in funds were allowed by Congress for construction of camp and picnic areas in national forests.

About this same time, in the late 1950s, the Outdoor Recreation Commission was established. After the commission's report in the early 1960s, outdoor recreation received a big push everywhere--federal, state, and local.

Resistance to Multiple-Use Appropriations

ERM: Who do you associate with the establishment of wilderness areas in the Forest Service?

VLH: I would say that the one who had been most responsible for the concept was Aldo Leopold. There were several others, I understand from my discussions with people active at that time, who were

associated with the idea. Arthur Carhart is one of them. There were others sympathetic to the idea.

ERM: Do you recall the particulars of what Carhart did and when he did it?

VLH: I recall some of his writings at the time, but I don't recall whether he wrote about wilderness. He is reported, however, by some as endorsing Leopold's idea. Now, whether he had conceived the idea of setting aside some of the national forests for wilderness before Leopold did, I don't know. But anyhow when he heard about Leopold's propositions to set up the Gila Wilderness Area, my understanding is that he was one of the strong supporters of it. There were others; some of them at the top were very much in favor of the idea. So there was a certain sentiment in the Forest Service, I would say, that has always been partial to the cultural benefits.

But there were people in the Forest Service--the Forest Service is a big organization--particularly those who had the responsibility, say, for running the timber branch that were wholly timber oriented. I can give an illustration. I made an integrating inspection in 1958 of the Northeastern Region.* It was a region that I knew quite a bit about, because I had been director of the station in that area at one time. Each deputy chief took his turn, as you probably recall from the scheme of things, in making an integrating inspection. He always had another inspector on it who was usually a career inspector who did much of the spade work and provided the continuity that was needed.

Well, when we took a look at what the Forest Service was doing in the Northeastern Region and particularly when we took a look at the national forests, the one thing that struck both of us who were doing the inspecting was that, of all the regions that we could think of in the United States, this was the one that was receiving and ought to receive the most pressure from outdoor recreation. Also, it is one in which watershed management has long received much local public attention. It always has critical water problems. Also, wildlife habitat has been long prominent.

* U.S., Department of Agriculture, Forest Service, "A Report on Forest, Watershed, and Related Resource Conditions and Management, Eastern Region and Northeast Forest Experiment Station, 1958," by Verne L. Harper and Russell B. McKennan. General Integrating Inspection Report. Typed. National Archives, Record Group 95, Records of the Office of the Chief.

However, when we began to examine what was being done, why, we found that, yes, the region probably had one of the better programs in watershed management of all regions, but it was small. The region was also doing a pretty good job in wildlife habitat management--some very fine examples of cooperation with the states--but it too was small. And in recreation they were hard-pressed to provide the simplest kind of facilities in the face of mounting demands. Their facilities, compared to what the states were doing, were very poor, overcrowded.

When we inquired, "Why is this so? Here is a region where the cultural benefits from the resource run very high, and yet it has relatively small programs in the recreation area compared to what we see going on in the timber-use field." "Well," we were told, "That's where much of our money is. We get money for timber use, but we get but very small amounts for these other things. There is an imbalance in the allotments we get from the Washington office." I thought I detected quite a feeling of desire on the part of the regional forester, who happened to be Ham Pyles then, and many others that we talked to, for getting a better balanced program.

So when I returned to Washington we prepared a report in which we criticized rather roundly the imbalance in the program and wondered if something couldn't be done about it from the standpoint of allotments. Well, these reports get reviewed, you know, and they were reviewed by each national forest division. As the Recreation Division reviewed it, they would put such comments on it as, "Hurrah!" And when the Watershed Management Division reviewed it, "This is fine."

When timber management got it they blew up and didn't even show me their comments. Ed Cliff then was deputy chief in charge of national forest management programs. Ed brought the comment in from the Timber Management Division. He says, "You probably ought to see this." I read it, and, boy, in effect it said, "This does it! The only bread and butter activity in the Forest Service is timber, and now they want to cut the timber program." Well, I asked Ed Cliff, "What are you going to do about it?" He said, "It's got to be reviewed by top staff."

As I recall, the report survived the reviews, but whether it had any effect, I don't know. But it does show that there was sharp division in the way the Forest Service itself was thinking about the use problems. It is true that the Timber Management Division handled a heck of a lot more money than anybody else did. Their projects,

particularly timber sales, were able to get money from the Congress because they were revenue producing and had support of industry and the Budget Bureau. I don't blame the Timber Division people. They were trying to do the best job they could. If the blame is anywhere it is on the rest of us who didn't insist that there should be a better balance by working at it at the main source of the trouble, namely in the budgeting and the appropriation process.

ERM: I suppose it is like any big organization, public or private. People tend to become centered in their own division or special area and thus develop a tunnel-view of the world.

VLH: Yes. That's, of course, the reason we had deputy chiefs who were supposed to give coordination to the work under them and between them. But this is rather difficult to do particularly when you've got the appropriations cards stacked against you.

Research in Watershed Management

ERM: Then watershed management became very important in your particular purview, didn't it?

VLH: Yes. And I think that this is an area in which we did better. We had a longer history of research in it for one thing. We knew more about things that could be done. I remember talking over with the top staff that one of the jobs that we needed to do in the watershed field was to provide a better inventory of the soils on national forests. We knew considerable about practices to stabilize soils to reduce floods, but we didn't know very much about soils as such. There were no soil survey maps of forest land or of wild land.

About 1957, I believe, it was agreed that I should work up a cooperative agreement with the Soil Conservation Service that would give them the technical leadership on the project since they were doing soil surveys for other lands and that we in research, with the help of funds coming from national forest administration, would conduct pilot surveys in cooperation with the Soil Conservation Service. And it was agreed that after we had conducted a few pilot surveys and after we'd got the methodology worked out, then we'd turn the whole thing over to the national forest regions to run.

This was done, and I think it is one of our most successful programs. I think the managers of the national forests are getting a much better grasp now of the variation in soils and the relation this has to the kind of protective treatment that should be applied to prevent excessive erosion and runoff. Then take the matter of vegetation manipulation, a device that can be used to change the timing and quantify of the flow of streams. We also did a great deal of research in this subject area, some of it going back to the early days.

ERM: The watershed work was propelled earlier because urgent water problems were manifesting themselves. So wasn't this, in a sense, a response to pressures and needs?

VLH: Yes, there were needs but not a great deal of pressure for programs. Of course, there was some interest in forest influences, in watershed protection, that goes way back. It probably even preceded interest in timber. You may recall that the purposes for the establishment of national forests, as given in the act of 1897, were providing for a continuous streamflow and for perpetual supplies of timber.* These two purposes were actually named in the act. I think the public wanted to believe something good about watershed management. There was a feeling that forests had a beneficial effect on climate and on other things. The public didn't ask for much proof. And if we gave them a little bit of evidence, no matter how shaky the basis, why, they were inclined to take it.

I think a lot of our response in the beginning of our work in forest influences was stimulated by this early feeling on the part of the general public that there was more influence of forests on streamflow in particular than some skeptics, such as engineers, suspected. So we began to try to find out what effect vegetation would have on water supplies, how one could decrease the overland water flow, how to prolong the streamflow in the summertime, and so on. Of course, this also got us into controversies right within the Forest Service itself.

Particularly questioned from a policy viewpoint by some were results that showed that by changing from, say, a timber vegetation to a grassy vegetation, the chances for increasing water supplies were enhanced. There is a lot less national forest revenue

*Forest Reserve Act of 4 June 1897, ch. 2, 30 Stat. 34-36, 43, 44, 16 U.S.C. secs. 424, 473-482, 483, 551 (1964). Also known as the Sundry Civil Appropriations Bill of 4 June 1897.

in range forage than there is in timber stumpage. We had quite a group of people to convince that such a change in forest use might be useful in some situations. There were times when our research people were politely accused of unknowingly, if not deliberately, embarrassing the Forest Service by feeding research results to people on the outside who strongly felt that there ought to be a change in the way the national forest programs were oriented.

The real push to give priority to increasing usable water supplies came in the Southwest, in Arizona mostly, where interest was very high for doing anything that might increase the water supply to the arid valleys below the forested mountains. As far as the local people were concerned, the urban and the agricultural interests were for any measures that would increase water for their uses. They were saying to the Forest Service, in effect, "If you need to get rid of all the timber and convert the forest land to range land in order to give us a few more inches of water, we're for it."

The upshot of the internal controversy and the foot dragging in the ranks of national forest administration was a large pilot program of manipulating forest cover to increase water yield in national forests of Forest Service Region 3, the Southwestern Region. In one area, the Beaver Creek drainage near Flagstaff, Arizona, the Rocky Mountain Station's watershed research group cooperated with Region 3 in installing stream gauges and precipitation-measuring devices. In all of the pilot operations a joint plan was prepared by research and administration. Moreover, the research group undertook the evaluations of the results. The keen interest of the people of Arizona in measures to increase national forest water yields plus Senator [Carl Trumbull] Hayden's powerful position in Congress stimulated these pilot operations and made them possible by increased appropriations earmarked for the purpose.

I don't know the outcome of the evaluations. The Arizona and New Mexico forest-cover manipulations are still underway, I believe. Meanwhile, forest-cover conversion to increase water yield is being applied elsewhere, in southern California, for example. There the conversion from brush to grass is favored for still another reason: to provide protection against forest fire.

Evolution of the Administration of the National Forests

- ERM: What would you say about the role of the Forest Service as the manager of the bulk of the forested public lands up to, say, World War II, as compared to what the role has been since then? Isn't it fair to say that up until World War II the role was more custodial than since? There has been much more emphasis since the war on harvesting the forest in the management way. How would you interpret that?
- VLH: Yes, you could call it custodial, give it any name you wish, but the explanation behind it is that up until World War II there wasn't the demand for the products and services from national forest lands that developed after the war. Therefore, there wasn't the need for intensive management. This was true on all forest lands, industry land as well as national forest land.
- ERM: Immediately accessible raw material sources were pretty well depleted by the beginning of World War II. There was greater need to go into national forests.
- VLH: Yes. The more accessible material on private lands was becoming depleted. You see, up until World War II, private industry, I think, had a feeling that they couldn't afford to practice forestry and that they better liquidate their mature growing stock and turn the land back to somebody else to shoulder the taxes, sell it if they could--they were selling some of it to the national forest system--or let it go back to counties for nonpayment of taxes. We had a so-called new Public Domain that developed during the period of the Great Depression; a lot of land reverted to county ownership.
- ERM: Particularly here in the South?
- VLH: Yes, some here but more of it in the Lake States and in the Pacific Northwest. They were probably the worst areas.
- ERM: So there was a great howl and cry about how taxes were so oppressive that operators in the field just couldn't afford to practice forestry. And then legislation was passed at the state level that created a tax break for the landowners, but, in actual fact, did they take advantage of the tax laws when they came into being?
- VLH: No. Modifications of, or rather substitute taxing devices for, the state property tax that were aimed to favor forest landowners have been pretty much a failure across the country. And I think it is the

feeling now among most tax assessors and students of taxation in this country as well as the conclusion of the experts in European countries that there really is no substitute for the property tax. You can pass a yield tax law or a severance tax--there are other things that you could do--but the county governments have got to have funds on a steady-flow basis. When you tax land on a timber yield tax basis, you've got only an uncertain periodic revenue coming in. That is difficult to cope with by local governments who must provide schools and roads on an annual cost basis.

So they have come to the conclusion that we've got to live with the property tax and find some way in which to apply it in accordance with the productivity of the land. In other words, don't tax the forest landowners out of existence; confiscatory taxation is what the forest landowners are threatened with, I think, here in Florida, for example. And if we didn't have a pretty good group of tax assessors in Florida and probably elsewhere who are willing to try some scheme to modify the property tax to fit forest lands, we'd be in a hell of a fix for forestry.

Land assessments have gone up throughout the South, particularly in the states with laws requiring assessment at fair market value, and a rising tax rate to boot has shot taxes up as high as a \$1 to \$1.25 an acre. When you get up in that realm of tax cost per acre for forest land, growing timber is a pretty low-return business in many areas.

There has been a serious attempt in this state, and I am sure in others, to try to relate the property tax assessment to the timber productivity of the land in terms of forest products, so that the taxing bodies won't exceed a safe level under which one could afford to hold and manage forest land with some prospect of profit.

MULTIPLE USE-SUSTAINED YIELD ACT OF 1960

Passage of the Act

ERM: Could we consider the Multiple Use Act and try to pin down some details on that, just as we did on the McIntire-Stennis Bill?

VLH: I am not sure that I can add much detail to that, other than that which is available, even in publication form, now that Ed Crafts's article in American Forests magazine is out.* During the time that Ed Crafts was very busy on the Hill herding the passage of this bill, I was extremely busy getting organized for the World Forestry Congress. This act passed in 1960, and the World Forestry Congress was held the fall of 1960, and there was a period of time about a year there that I didn't have much time to do anything except handle matters in connection with getting the World Forestry Congress into operation, plus carrying on the most urgent forestry research administrative matters.

I knew what was going on, but I also knew that Ed Crafts didn't need very much of my help on this sort of thing. This is something that I think that one person has to deal with himself. You don't spread it out, not in Washington anyhow. It is true that you have to get a lot of help from the field, and that I had concurred with Ed Crafts that our station directors could be brought in on this. They wouldn't be as involved, say, as regional foresters would be, but certainly they should be given the background material and be ready to explain the proposed legislation, the reasons for seeking it, what multiple use is all about, and so on. So I knew that our station directors, especially, were involved in meetings and discussions about the bill.

But on the Hill itself there were vital matters of hearings, of objections being raised by this congressman or that senator; this wasn't something that I was up on. I'm not sure that anybody was

*Edward C. Crafts, "Saga of a Law," American Forests, Part I, 76, no. 6 (June 1970): 13-54; Part II, 76, no. 7 (July 1970): 28-35.

up on most of it outside of Ed Crafts, maybe Reynolds Florance; because, again, as I say, you don't spread this around too far. I'm sure [Richard E.] McArdle was kept infomed day-by-day as to what was going on, but I don't think he got involved except in key situations where he felt that his presence or his explanations would be helpful. I believe there were a few times when he did go up to the Hill and testify. Otherwise, Ed Crafts was the one who did it.

ERM: Did Reynolds Florance compose the bill along with Ed Crafts?

VLH: No. As I understand it, Reynolds Florance did the original draft, with Ed Crafts's ideas incorporated, but it got complete revision over in the Bureau of the Budget, undoubtedly in consultation with Reynolds Florance or Ed Crafts. The budget folks had a feeling that they could make this more harmonious with administration goals and with other land management bureaus in the federal government, if they carefully watched the language. They didn't change the goal of this legislation, particularly, but there were certain details and phrases that they wanted incorporated in the bill and so on. They had to look at the bill from the standpoint of the interests of many other federal agencies.

I'm sure you know that the National Park Service was deeply involved, very deeply interested, in what was going on, and I believe we can fairly assume it was raising objections, if not directly, at least indirectly, through their friends. The friends of the National Park Service were certainly making a point throughout the hearings and in other discussions that I knew about that this proposed bill was aimed at stopping them from getting more National Park Service lands from Forest Service lands or rather from national forest lands. Somehow, they seemed possessed with that idea.

Well, in a way, that was true, even though Ed Crafts stoutly denied it in his written article. I don't know whether he would just as stoutly deny it in a personal interview or not. I think he is saying less than the whole story--I'm speaking of what was published in the article in American Forests--when he mentions that they had this complaint about the bill that it was designed to prohibit the transfer of national forest lands to national park status and he makes the flat statement, "This is absolutely not true." Well, I am sure that one purpose of the bill, at least as I understood it, was to make it harder for park advocates to justify transfer as the only means of preserving environmental amenities.

- ERM: Particularly in regard to the acquisition of wilderness areas in the national forests, right?
- VLH: Not necessarily wilderness areas only. What this bill was attempting to do was to point up that all the uses were legitimate and deserving of equal consideration and that there was a lot of extra market values to be protected and enhanced in the national forests. Multiple use was a legitimate and characteristic feature of national forest management. Therefore, why should you transfer land to national park status for the purpose of recreation, scenery, and so on in order to assure the benefit of these resource amenities? You could get them just as well on national forest lands under a regime of multiple use and still produce timber for housing, range livestock for the meat market, more useable water for communities, and wildlife and fish for hunters and fishermen.
- ERM: And, of course, the Park Service and their allies have been consistently trying to reserve the function of preservation and enjoyment of wild land exclusively for themselves.
- VLH: I am sure that they were happy with the public image that they had. The image that they and their friends helped make was that they were the principal agency that was responsive to the wants of people for, and deeply interested in, outdoor recreation, including wilderness preservation.
- ERM: Would you say, then, that it is likely that this attack on multiple use and on this act created in 1960, is an endeavor to reestablish that claim for the other departments of government or some new department of government?
- VLH: Yes, there may have been a future and broader goal that motivated some of the attack. I'm inclined to think, however, that the attack was inspired mostly by those who were thinking either of wilderness preservation per se or of the expansion of the national park system itself. It was no secret at that time that Conrad Wirth was ambitious for national park expansion, and he was aggressive in building a public image of the park system favorable toward expansion. He was an outstanding administrator with a long antenna for spotting threats to his National Park Service goals.

He wouldn't have to campaign openly against the threat of multiple use; he, or rather the national parks, had friendly pressure groups ready to fight the battles for wilderness preservation or for

national park welfare. The National Parks Association, the Sierra Club, the Wilderness Society were all prominent participants in the influence that was brought to bear on the political decision makers. As Crafts pointed out in his article, the Sierra Club never did withdraw its very active lobbying against the bill.

The record of the Sierra Club would indicate its greater interest in wilderness preservation per se than in primarily protecting the national parks system. I think the Sierra Club foresaw a real threat in the popularity of multiple use becoming a favorable force that would allow encroachment of logging into roadless areas and a consequent shrinking of wilderness conditions. Therefore, their frontal attack then was to kill the bill.

Now, the forest products industry had qualms about the bill, too, for different reasons. As you know, it withdrew from the fight.

ERM: The apparent rapprochement between the Forest Service and industry and, subsequently, industry's adoption of the multiple-use name in its own forestry efforts, I suppose, are interpreted by these conservation groups as evidence that the Forest Service and industry are all in bed together and that the Forest Service is more concerned with commercial uses than it is the other multiple uses.

VLH: Well, I think that is probably a rationale that the conservationists knew they could make a lot of people believe, but I'm not sure that is the real belief of the conservationists-in-the-know on this. They are like everybody else who has a special interest. What they say isn't exactly what they believe at times. It's to their interest for the public to believe this is true, and they were capable of giving a nice logical explanation just as you have, which would help support that view.

I think that real leaders in the conservation field know that there is no collusion whatever. But keep in mind that industry, I think rather reluctantly, gave up its opposition to this bill, because it had a great deal at stake here and quite rightly was concerned with the drive for new legislation on use of national forests. You see, up until now, despite the way the Forest Service felt about the authority it had, industry could still point to the act of 1897 where

timber was mentioned and recreation was not. So the industry people felt that that gave them somewhat of an edge as a dominant user that ought to be favored. Also, they had the feeling that the public image of the uses on the national forests favored timber. I think they were right in that assessment because this was and still is the biggest activity going on, and it was the activity that returned the most revenue to the treasury. It was the activity that was the subject of much publicity both by the Forest Service and by the industry on what they were doing on forest land. So why should the forest industries be in favor of legislation that would tend to tarnish that public image and hence weaken their position in the use-structure of the national forests? I frankly was surprised that they gave up their opposition as quickly as they did. I congratulate them for their early perception of the other, less tangible, values from forest land which were mounting in the public's view.

Meaning of Multiple Use

ERM: Isn't the multiple-use idea difficult to apply at the ground level? You have all these special uses addressed by many specialists each of whom is concerned with his particular use. I get the impression it is difficult to get it all together and apply multiple use at the land level.

VLH: Can I go back to what I mentioned previously about the concept of multiple use and the great confusion that has prevailed over the concept? As I said, multiple use means different things to different people. Another way of saying this is that the public image of multiple use can be a far different thing depending upon one's interest in the forest.

ERM: And it is confused.

VLH: It sure is confused. I am not sure that in the Forest Service itself that we all looked at it in the same way. I think there was a feeling,

both inside and outside the service, that multiple use had a universal meaning, that the kind of multiple use that fit the objectives of national forest management was the kind of multiple use applicable, also, to private ownership. In other words, multiple use was generally considered appropos to almost any kind of ownership that wasn't limited by law to a single dominant use.

ERM: Almost an eternal verity.

VLH: Yes. And so there has been from the start this confusion about what it meant. Naturally, there was difficulty in defining guidelines and putting programs into effect. Now, where do I think that we fell down in the Forest Service? Once we got a multiple use act and settled that we were to apply the multiple-use principle of management to the national forests, we did not proceed fast enough to devise guidelines and programs to get it to the ground.

This included all of the planning that must accompany the application of multiple use, all of the alternative courses of action that one must consider before settling on a particular course, and more important than that, which no one foresaw until very recently, was the importance of getting the concerned publics involved in the planning and decision-making process so they could look at the alternatives and share with the forest land manager some responsibility in making a choice. If all this had been done earlier it likely would have prevented a lot of the controversy that has developed.

ERM: In other words, it was in the follow-up.

VLH: It was in lack of prompt follow-up to get effective multiple use into practice.

Buying Time With Legislation?

ERM: That might imply that the multiple-use declaration had the purpose of diverting public attention from something else--get the monkey off your back, in a sense. Is there anything of that in the history of the multiple-use idea?

VLH: Yes, I think that was an important part of the reason for seeking a

multiple use law. There was a broader and more basic reason, however, that appealed to me. This reason was the need for a device that would focus national attention on the multiple-use capability of national forests for the purpose of public education. To be sure, a proposed multiple use bill would draw the pressure groups to the legislative pressure points and away from pressing their special interests directly on the Forest Service.

I wouldn't want to minimize the importance of getting relief from pressure on the service, but the bigger goal appeared to be the elimination of so much confusion about the purpose of national forests and the difference between national forests and national parks. There was great confusion in the mind of the public as to whether national forests should be put into national parks. It didn't distinguish between them, as a general rule.

ERM: In fact, even today it doesn't.

VLH: No. And there was confusion as to whether the act of 1897 did or did not mean that commodity uses, timber and water, should receive priority over all other uses. In general, the view that industry groups held saw timber and water, the two uses mentioned in the 1897 act, as primary uses. Other groups saw other uses as primary ones.

On the other hand, we knew in the Forest Service that we had a legal basis for all the uses because there were many acts that had been passed--appropriations acts and others--that had sanctioned them. So there wasn't any question in our minds about the legality of multiple-use management, but there was great merit in focusing national attention on the fact that national forests were lands of many uses and that often a combination of uses yielded the highest net benefit. These were not lands of limited legal uses, like national parks. I doubt that many of the congressmen appreciated that fact until they got into debate over the Multiple Use Bill--a debate that was bound to reveal sharply the difference between national forests and national parks. Some in Congress had been dealing directly with the Forest Service and already knew the capability of the national forests, but the rank and file congressmen certainly didn't. Many more, however, undoubtedly did after the Multiple Use Act was passed.

This act performed an educational function which undoubtedly helped the Forest Service do its job. Plus, it drew attention away

from some of the harassing problems with which the Forest Service was having to cope. It caught the special interests whose attentions were diverted to protecting their interests in the proposed legislation, and I think a lot of good came of that. Some of the organizations that bitterly opposed the proposed bill in the beginning changed their minds once they got better acquainted with it--some never did.

ERM: But it gave you a five-or six-year breathing spell.

VLH: Yes, I think it lasted even longer. Normally there is a relatively brief breathing spell after passage of major legislation, a period when the new law is being implemented with administrative policy, programs, personnel, and funds. It doesn't take the interested public long, as a rule, once programs become actions to decide whether they like or dislike the results. In the case of the Multiple Use Act of 1960, the immunity from assessment lasted longer than usual for several reasons.

One was the result of publicity by the ardent advocates of multiple use that tended to spread, perhaps unknowingly, perhaps deliberately, the propaganda that multiple use was a panacea for most forest-use troubles. Another reason was the complexity of the concept of multiple use and the little-understood process of bringing into being a harmonious combination of uses appropriate to given ownership objectives.

Still a third reason was the tendency of each pressure group to see multiple use always in terms of a balanced use that was tipped in its favor. Altogether these reasons invested a certain mixture of mystery and magic in the idea of multiple use that undoubtedly prolonged the period of immunity from attack which eventually came, especially from preservationist groups, against its alleged shortcomings.

Multiple Use Defined by Ownership

What I have said brings out in part one of the things that I think needs to be brought out more fully about the concepts of multiple use. Until you tailor and condition its application to the

objectives of ownership, the concept hasn't much utility; it's just an idea. Most forest land in truth is capable of supporting two or more uses and oftentimes the net benefit from a combination of harmonious uses is greater than if you apply just a single use. I think everybody would agree to this statement. But after you have said this you've got to start talking about uses in terms of specific ownerships.

Industry ownerships, for instance, have objectives peculiar to the private enterprise system. One of them is to make a profit, otherwise they would have to go out of business. Therefore, we should expect to see an industry ownership do only those things in the multiple-use framework that won't seriously interfere with the making of a profit. This doesn't mean that it would completely ignore a use that costs money to provide beyond a realizable monetary return. The pressure of public opinion as a regulatory measure can be great. Sometimes it is very effective. Moreover, most corporations want to be good citizens, so they open their lands to hunting and outdoor recreation, sometimes at a considerable cost to themselves. However, some of them have found that there are ways that they can recoup a part of their costs. They have discovered, for example here in the South, that people are willing to pay for hunting privileges, especially if good wildlife habitat management is provided and the hunting areas are organized.

So much for adapting the multiple-use concept to private ownership objectives. There has been a lot of talk to the effect that multiple use has no place in the handling of national park lands. This begs the issue; it evades the real point. The point is that, whereas several uses are made of national parks, any application of those uses must be consonant with the purpose of national park management, which is to protect the areas from commercial use of timber and other commodities. Beyond these specific legal prohibitions, the parks do, of course, afford protection of watersheds, preservation of scenic values, protection to wildlife, fishing, and many other forms of recreation.

ERM: You can have recreation and wilderness experience.

VLH: Yes. Preservation of natural conditions and recreation are the main purposes. I think a lot of the bitter arguments that were generated during the time that this bill was being considered by the Congress were precipitated by lack of understanding of the multiple-use concept. Friends of the National Park Service were inclined to characterize the concept as hooley inasmuch as several uses were served in most any

class of land ownership. Friends of the proposed bill saw a different kind of multiple use for the national forests, a concept closer to being holy rather than hoey.

ERM: Isn't the quickest way to destroy something to say it has no meaning, that it's lost its original sense?

VLH: Yes, I suppose that is the reason such arguments pursue the debunking tactic in the political process of policy formation. I might add I'm not sure that all professors who have lectured on the subject have a full grasp of the concept of multiple use, such as Ken Davis has. He, I think, has done a pretty good job of trying to define multiple use and to point up the problems of application. He has probably done more than anybody else in this area.

Fifth World Forestry Congress

ERM: The writing of the Multiple Use-Sustained Yield Act was tied in also with plans that were going forward for the Fifth World Forestry Congress.* The Multiple Use Act would be announced with a great sounding of trumpets. Now, all of this gives the impression of a well-planned strategy in the Forest Service. You were in the inner sanctum. Was there such a strategy?

VLH: Well, I was intimately connected with getting the World Forestry Congress to adopt the theme of multiple use. I think I originated the idea and carried it through endorsement at the FAO [Food and Agricultural Organization] conference, with McArdle's concurrence, of course. This began back at least three years before the congress, so I expect we had been planning the theme as early as 1955 or 1956. I recall we were well along in our planning at least three years before the congress, including the selection of Seattle as the site. I was directly involved in all phases of planning for the congress. As chairman first of a preliminary planning group and later as chairman

*Proceedings: Fifth World Forestry Congress, 29 August to 10 September 1960, Seattle, Washington, 3 vols. (Seattle: University of Washington, 1962).

of the Executive Committee in the Organizing Committee, I probably had more to do with planning the congress than anybody else in the United States.

In regard to getting the bill passed at a time so that this policy could be announced at the congress, this we didn't know very far in advance. Such announcement was, of course, a desirable idea, but whether it could be realized was doubtful up to the last minute. The fact that the act went through in record time exceeded anybody's grand hopes. To put through a piece of major legislation in the space of two years is almost unheard of, and I must say Ed Crafts did a fine job steering the bill through all of the committees and getting prompt action on it.

ERM: Do you think that the fact that there was a World Forestry Congress in the offing influenced the Congress to move more swiftly?

VLH: I don't think it was a consideration with the federal Congress. It was of some importance to the Forest Service, however. We were anxious to focus as much United States public attention on national forest multiple use as possible. We were not overlooking the value to our foreign visitors of a program centered on multiple use, but we recognized that the concepts and surely the practices of multiple use were more familiar in some countries overseas than in our own.

The main reason why I proposed that this subject be put on the agenda was the hope it offered of having a wholesome effect on our own people. I'm not thinking of just the foresters; I'm thinking of the whole public. I'm sure that McArdle, Crafts, and others shared this view. It wasn't difficult to get the multiple-use theme adopted for this world congress. The country that hosts such a meeting has a pretty free hand in setting the program. Fortunately, our proposal met with enthusiastic response by other countries and the forestry department of FAO.

Need for the Act

ERM: Were there other factors involved in bringing the Multiple Use Law into being, internal factors in the Forest Service itself that might

have provoked a kind of crisis that demanded legislative action?

VLH: No, I don't believe so. I think that it was recognized that there were differences of opinion within the Forest Service about the emphasis to be given particular uses depending upon where a man sat, the responsibilities he bore, and his own philosophy. Needed changes in attitudes are matters that must be handled internally and it is doubtful whether legislation could help very much.

ERM: What I am driving at is that the tendency of the profession through the twenties, thirties, and forties was heavily weighted toward timber management, and the Forest Service, like the profession, reflected that tilt. Was there such commitment to this emphasis, with resultant movement within the agency, that top management of the agency recognized a need for congressional authority to spread forest policy more widely, to give greater recognition to other values besides timber management?

VLH: I can't answer for all of top management of the Forest Service. There may have been some who felt a fresh policy declaration by the Congress would strengthen the hands of the chief's office to directly bring about internal changes in professional attitudes and outlook. I did not hold such a view myself, and I can't recall that anyone else advanced this reason seriously as an important legislative objective.

It is true that the Forest Service as a whole was heavily oriented during the time of the proposed bill toward timber use. And I am not sure I could truthfully exempt all of top management from such bias. There were many external forces pressing the service to expand timber sales as fast as possible to the extent of allowable cut under sustained yield. These forces were budget considerations of the top executive office and the Congress, as well as pressures from timber users.

It was difficult for the agency to resist these external forces toward timber harvest expansion. The hope of most of us, I believe, was that a new policy directive from the Congress would help equalize pressures from the several major user groups. This would help correct bias in budgets and programs, and, indirectly, these changes would cause changes in professional horizons and more appreciation for the noncommodity values of the forest.

As a footnote to the hoped for redress of balance in the external pressures for resource use of the national forests, let me

add that the pendulum finally swung with a vengeance not anticipated at the time of the proposed Multiple Use Bill. Paradoxically, some of the interest groups who had bitterly opposed the proposed bill currently appear to see virtue in it if the principles of multiple use are properly applied. Which is to say, if tipped in one's favor, multiple use is good and proper. I am not suggesting that the pendulum has swung too far or that it has become fixed in motion, nor am I implying that the behavior of pressure groups is morally deficient. The point I wish to make is that we have recently seen the Forest Service being clobbered with the tool of its own fashioning. The court injunctions against logging in certain areas not yet opened to timber harvest and the public outcry against national forest clear-cutting operations all seem to cite, among other faults, as grounds for complaint, the neglect by the service of the Multiple Use Act.

The reason that is often given for the agency's desire for the Multiple Use Act was the need to clarify the legislative authority. I don't think there is any question but that the Forest Service already had the authority. But it is always a good thing, if anyone has doubts, to get Congress to give a fresh expression of policy. But getting new legislation and not effectively implementing it does not carry one very far.

I won't say that we in the Forest Service didn't appreciate this fact. We knew we had to do something about it. But getting all of the fuzziness out of the meaning of multiple use; getting guidelines laid down; getting the principles of multiple-use management applied; getting the competence on the ground to do the kind of unit planning and zoning needed; and the development of pros and cons of alternative courses of action--all constituted a very big job. And I don't think the components of multiple-use application were visualized very well, let alone the dimensions of the task.

Role of Research in Interpreting the Act.

ERM: How much progress has been made? How great a contribution was made by U.S. Forest Service research?

VLH: I think quite a bit of progress has been made by the national forest managers in improving the procedures for applying multiple-use

management. You might ask why the research arm didn't take a leading part in this? I must confess we could have made a stronger effort than we did.

I was asked many times by members of the Washington top staff and by regional foresters, "What can research contribute toward the practice of multiple use?" My replies were probably very inadequate from the way I look at it now. My reply then was in effect, "Well, essentially as I see it, the big need is for administrative policy and action that will result in guidelines for field use and procedures for identifying units of land area and use combinations to apply to them."

"Then you've got a rather big job of evaluating alternative combinations of uses. Here is where I think we in research can help. Our main contributions probably can be made by our economists in the methodology of decision-making within the context of planning and alternative courses of action from which one must choose." We recognized that we hadn't done much as yet in this area of research and that we ought to be doing more. We made a start on the problems in our economics research branch, which continues to work on the problems. I believe the economists have been doing a great deal in this field since I left.

What I didn't foresee were acute problems that lay in modifying silvicultural practices to make them more acceptable aesthetically, especially in areas of high visibility to the public. But we got a start on such problems, also, before I left. For example, we published a report. It was titled in part, Management for Beauty and Use.^{*} In the report we pointed out that in certain forest types the silviculture could well be modified to preserve the beauty of the forest particularly where recreational interests were high. However, we had no idea then that so much criticism was soon to be focused by the public on clear-cutting practices.

Also, we didn't foresee that the national forest administration was soon to go so far overboard as it did in adopting clear-cutting because it was the most efficient practice. Here is an instance of research in which we pointed out for a number of forest types the benefits of clear cutting over selection cutting in terms of greater efficiency, results were strikingly convincing, so much so that

^{*}U.S., Department of Agriculture, Forest Service, The American Outdoors: Management for Beauty and Use, Miscellaneous publication no. 1000, (Washington, D.C.: Government Printing Office, 1965).

clear cutting rather quickly became the prevailing practice in much of the national forest timber management.

ERM: Efficiency was their goal.

VLH: Yes, efficiency became the goal. Doesn't that have a familiar ring as conventional wisdom? If we had been smart we would have cautioned, "Beware, efficiency in timber growing and harvesting shouldn't always be your goal."

ERM: Was there any move to crank in more research of a different type than had been done in the past? Wasn't most of your research oriented towards the technological end, towards natural scientific research?

VLH: Not entirely. We had social science researchers both in Washington, D.C., and in our regional forest experiment stations. We probably had the biggest group of social scientists working on outdoor recreation problems, for example, of any organization.

ERM: Sociologists.

VLH: Yes, and economists, psychologists, political scientists, and others.

ERM: Do you think it was enough of an effort in that direction?

VLH: No, oh no.

ERM: Might not part of the problem lie in the fact that it was not a substantial enough effort? Too little, too late, perhaps?

VLH: Not near enough, no. Had we foreseen the people and policy oriented problems more clearly, we probably would have put more effort in that direction. I think more of such research, then, would have helped materially in preventing some of the problems from developing to the extent they have over recent years.

Public Involvement in Multiple-Use Decisions

ERM: Was it, in other words, an emphasis on the tree and land problem, rather than the people and the land-use problems?

VLH: Well, yes. The balance of research effort was tipped too much toward the resource itself, the technology of resource management rather than on problems of people's wants.

You asked, "Is the Forest Service now giving more attention to people problems in the national forests?" From what I read, and I read a great deal about what's going on in the Forest Service, I find that on the Ocala National Forest [Florida] we have one of the best examples of multiple-use management planning that I know about. It's one example that I use in my classes here at the University of Florida.

The key to the improved relations of the Ocala forest with the public over management practices to be applied on the forest is the involvement of the concerned citizens in the planning and decision-making process. First, the supervisor of the Ocala forest scheduled listening sessions, well distributed over the state, at which anyone with a gripe or other concern about the handling of their national forest could express his views.

Second, national forest staffmen drawn from the various professional specialties--timber, water, fish and wildlife, recreation, landscape architecture, psychology, etc.--drew upon the listening-session comments to draft a review plan for the management of the Ocala forest. The plan entailed suggested combinations of uses and character of management unit by unit of land and water areas.

Third, the review draft was scheduled for a second public meeting to get reactions of the concerned public to the suggested plan. Oftentimes alternative uses and intensities of management were presented by the Forest Service for some of the units about which decisions were difficult.

Fourth, in the light of the review-draft session with the concerned public, the plan for managing the Ocala National Forest is now being put in more finished form.

According to the Ocala scheme, involving the public in the planning and management-decision process is never ending. As new problems develop and as changes in uses or management procedures are indicated, new public sessions will be held to give the concerned citizen an opportunity to participate in the deliberations.

The people users of the forest, environmentalists, educators, and others, who have attended these meetings are generally well pleased with this new effort on the part of the Forest Service to take into account as far as possible the wishes of the people. One participant, to whom I was unknown, expressed to me a feeling as he was leaving a review-plan session that I believe may be shared by many in Florida in regard to this new thrust of the Forest Service to involve people in national forest decision making. As I recall his words he said, "By Jove, I think the Forest Service is doing a good job there. I used to come around and beef about this and beef about that having no idea of the kind of decisions that had to be made and all the other things that had to be weighed in the balance before decisions are made. They have my vote of confidence. They can tell me now that they decided after careful planning to do such and such, and I'd be inclined to accept it."

ERM: But would this satisfy the ardent single user?

VLH: No. Then, of course, what some in the Forest Service are saying, and what most professionals in the policy-making field would agree with, and I subscribe to this belief, is that if you can't reach agreement with the concerned users on the uses to be made of given units of area, including how these uses are to be regulated and managed, then the only logical course open to the forest manager is to make the decision he believes best and allow the issues to become subjects for open controversy. Settlement then could come through appeal to higher authority, through public opinion pressures, or through the political process of policy formation used by pressure groups on decision-making pressure points.

ERM: What you are saying is essentially that the professional forester, Forest Service personnel, have got to know how to manage land, that they have got to know what to recommend for the long term to the public if it is public lands or to a private owner if it is private land. The owner has to determine what's going to be done. You, from time to time, must go back to clarify as best you can what public policy really is. And it is not easy to take a reading of what that public wants. Could you clearly say right now what the public wants with regard to management of forest lands?

VLH: Well, there are many publics, of course, and each wants something different. However, I don't think it is quite as hopeless as it may seem in determining the public view. I am a strong believer in the fact that people have wants from forest land for which you ought to

exert some effort to satisfy. The people may be poorly informed, and they may not recognize the consequence of doing the things that would satisfy their wants, but, to me, they have a right to be concerned and to want to help make decisions, particularly if it is public land.

I am almost inclined to say that they may soon press this sort of demand on private owners, too. Private owners may find themselves, not pressed as hard as public land managers are, but also involved in the process of taking the people into their confidence and making them partners, so to speak, in deciding what is the best course of action to follow in the use and management of their forest land.

Now, what this really means is that the professionals must take a different view than that of the past of how they apply their profession. On public land they have got to become accustomed to thinking in terms of alternatives and of choices, which means that they have got to do a better job of planning and analysis than they have ever done before. Analysis of alternative courses of action must reveal the good points and bad points of each. Care must be taken to include all the costs and benefits involved in the assessments, and this in turn means more care in finding useful criteria to better judge the goodness of a particular policy. If all these things are done, a good bit of the problem will be licked. They should go a long way in clarifying one's mind on what might be in the public interest. In the case of private land the ownership objectives and overall policies that apply to that class of land are different, of course, than those of public land. Nevertheless, the professional must consider many of the same matters just mentioned.

Finally, if these professional tasks are performed and discussion of them opened to the public before decisions are formed up, I suspect this would nip a lot of potential controversies in the bud. It is important for the concerned people to know they are being consulted in advance of final decisions and that they are being let in on what is going on.

What they object to more than anything else is perhaps the natural resource professions' ways of projecting themselves or making themselves out as being superior because of their training to know what's in the public interest, to know what's best for the people. Since we know all about natural resources, since we know how to handle them, Mr. Citizen, you've got to accept our word for it that this is the proper way to use and manage them.

There is a lot of this attitude, it seems to me, at the bottom of the argument about clear cutting. Clear cutting is an important tool in the kit of the professional, but so, also, is the analytical process leading to trade off. There must at times and in certain places be a willingness to forego some efficiency for higher values. If society feels it is perfectly willing to forego efficiency for the sake of aesthetics, it's up to society to make its voice heard. And it's wise for the professional to listen.

ERM: I see your point. That's the bind foresters are in right now.

VLH: I think the Forest Service is coming around to viewing its mission more and more in the light of people wants; I see evidence of it. And if what they are doing on the Ocala is being done elsewhere, as I understand it is, I would say, more power to them.

ERM: Well, you know, Art Greeley said this in Pine Mountain, Georgia, on November 5, 1969.* He was here for a meeting of the Georgia Forest Research Council. He said, "We've got to listen to what the public is saying about this, and, if we don't, we're going to be kicked in the pants." He says it a lot more eloquently in his speech.

VLH: That's a pretty good indication in itself that the Forest Service has many different people in it. And it has been a bigger job than probably some have realized to turn around the service to a new way of looking at things. I am sure there have been some in the Forest Service who have resisted change, persons with attitudes that would certainly fall short of expressing, "to hell with the people," but who would stand for the slogan, "professionally we know best."

ERM: Perhaps foresters want to be treated as doctors so they can say, "We know best what's good for you, don't try to second-guess our prognoses or our prescriptions. We know best how to cure your ills."

VLH: Doctors have a good thing going for them, and they are very zealously guarding it, too.

ERM: This controversy over multiple use is a very critical matter for both the public and for the Forest Service.

*"Multiple Use Practices, Problems, and Opportunities in Southern Forests," speech by A.W. Greeley at the Georgia Forests Research Council-Georgia Forestry Association Conference on Multiple Use of the Southern Forests, at Calloway Gardens, Pine Mountain, Georgia, 5 November 1969.

Multiple Use and Forestry Education

VLH: Yes. I think what it brings out very clearly is that professionalism in forestry or any other natural resources field means competence in the social sciences as well as in the physical or natural sciences. We used to think that competence in biology, in manipulation of vegetation and animals and so on, was mainly what was required. In most of our professional schools we have been oriented too much and too long along that line. It is only in very recent times that the forestry schools have been changing their programs. Most of them have changed their names, and I suspect that in some cases changes in names haven't been accompanied by much progress in changing the program.

My objection to name-changing is this. It is the least of what is really needed. Maybe it's helpful, but too often it is considered sufficient. Little else is substantially changed.

ERM: A new bit of window dressing.

VLH: Yes, a new name for the school, but the same old product. We have instances where they haven't changed the name, but they have changed the teaching program radically. Yale would be a case in point. So one doesn't have to change the name to change the program. The vital point is to get the program changed. And the changes should reflect more emphasis, I think, on the social sciences--managerial, economic, political science, and the like.

Many of our professionals will tell you that they are spending as much as 50 percent or more of their time dealing with people--explaining something to them or trying to satisfy their resource wants or in trying to change resource practices to accommodate their wants. One gets the impression that a professional doesn't get a chance to spend very much time on the things for which he was trained in school. We all need to do a better job in professional education.

It is not a simple matter, I can assure you, to get changes in the curriculum. At the present time we are trying to make such changes here. First of all, we are changing core requirements so that they will be applicable to all the students, whether they are wildlife majors, forestry majors, forest products majors, or whatever. The core requirements will lean heavily toward the social sciences and ecology.

Thus we expect to expose all our students to a thorough grounding in natural resource planning and decision-making; to a course in natural resource policy; to a course in multiple-use management; as well as to a strong underpinning of ecology, ecosystem analysis, and data handling. In terms of total credits, our new core requirements will be smaller than those now required. In terms of quality of education in tune with needs, the new core should be much better.

It takes a lot of planning, however, including committee work, to introduce so much substantially new material and to eliminate the old. Beyond the core-curriculum changes, we will offer further courses in various options. Students going into forest land management, for example, would take additional managerial or other social science courses.

ERM: Are you doing this here in Florida by bringing social scientists into the family of the school of forestry's faculty? Or are you sending your students outside the school of forestry to get their training in the various disciplines wherever they are established on campus?

VLH: Well, at the present time we are planning a combination of these measures. We don't have the money and not many forestry schools have the money to make themselves self-sufficient in all of the disciplines that are needed. The great value of being a unit in a university is that you can draw upon other departments. In some cases special courses for our students will be taught in other departments. In other cases there will be joint support of a faculty member. In still other cases we will fully support the needed faculty members.

ERM: Do you think changes are being made to any great extent in other forestry schools?

VLH: I think they are all thinking about it, and I think they are at different stages of progress. The schools that come to mind that have gone far in changes are Berkeley and Yale. I happen to be better informed on these than on the others.

APPLYING MULTIPLE USE ON THE NATIONAL FORESTS

In the Wake of the Multiple Use Act

ERM: I would like you to talk, if you will, about what happens after a bill is actually put through the Congress and becomes written on the statute books. In particular, what has or has not been done in the wake of the passage of the Multiple Use Act of 1960. How did the Forest Service move to implement the Multiple Use Act? How have they managed the land resources to meet the needs which people are expressing? To what extent is the man on the ground taken into account, to learn from his day-to-day experiences, and to examine how he is meeting the pressures of multiple demands for different uses of the land?

VLH: In general, when legislation is passed, there is the job of implementation that first of all requires development of subpolicies and programs and marshalling of funds and people and the organizational arrangement to carry out the programs. This is the standard implementation job that has to be done. Now, in the case of the Multiple Use Act I think one could fairly point out that the Forest Service had claimed, and I think it is true, that it had been practicing multiple-use management for many years. It had that authority and had, in fact, been using it. Therefore, one could ask, "Hadn't the Forest Service already implemented the authority for multiple-use management with administrative policies, procedures, and programs?" What I am suggesting is that it was not necessary to wait for the passage of this particular act to get going with the spin-out of subpolicies and program development and plans for personnel and funds to carry it out. This should have been going on before.

Now you have asked the question, "Has there been progress made in this?" I would have to answer that by saying that the kind of progress that I would judge to be adequate was in fact inadequate to the needs, as I look back at progress since 1960. Those needs of the people--and they are becoming increasingly articulate in expressing their wants--are for more emphasis on the noncommodity uses. It's not always expressed only at the local level. It could be at several levels and some of it may be exaggerated by pressure group propaganda. But, regardless, I would have to measure the

effectiveness of program progress by how it measures up to the criteria that would deal with these growing wants. I am thinking in terms of consultations, hearings, public meetings; any way that would involve the people in an intimate look at what the Forest Service is doing and what it is proposing.

We often say that this should be done at the local level, the ranger district. Yes, that would be a good locale for it if this is the place where the groups are expressing their wants and if this is a good meeting place, if this is a place of controversy. Certainly, the Bitterroot Valley would be one--I judge from the amount of controversy I have been reading about it--or the West Virginia case or the case in Colorado. Those have been good locales for holding the kind of meetings that I'm talking about.

ERM: It would have been especially good three or four years ago.

VLH: Yes, and the fact that it wasn't done sooner is my reason for saying progress has been inadequate to need. Now, in preparing for meetings, to make them meaningful and effective, where the concerned but perhaps poorly informed public is invited, they have to have something concrete to look at, which involves, beforehand, considerable planning on the part of the Forest Service. This is where I judge that we have fallen down in the Forest Service. The planning that is necessary to consider area by area, unit by unit, as to what uses are appropriate or which uses might be applied, has to be done.

Then, following that, it seems to me that one has to develop alternative courses of action of management. Let me illustrate this by saying if it is timber cutting that is involved, such courses would be alternative silvicultural systems by which timber would be harvested. If it's an area in which you consider wildlife habitat to have a prominent place, you would have alternative combinations in which timber and wildlife habitat would be involved. This could be giving timber the top priority in some areas; then with another alternative, timber would be given the lower level and wildlife the higher level.

Against these alternatives you would then develop the costs and benefits that go with each. By this I don't necessarily mean dollars and cents costs and benefits only, but I mean the benefits or costs measured in judgment-value terms in those instances where the costs in particular would be hard to identify let alone measure. I think it is only when the member of the concerned public has a

chance to view alternatives and their consequences that he is in a favorable position to then reason with you about which is the best choice. Oftentimes he would come to the same conclusion you did, I imagine, that your choice, of course, stands out above all the others. On the other hand, if there are two of them with not much difference in their consequences but definitely favored by the majority of the concerned groups that are looking at it, I'd say tip it in their favor. It makes very little difference in the outcome, and after all they are representing the segments of society that ought to have a say in the ends to which the forest resources should be put.

What Is Multiple Use?

ERM: Multiple use has been defined as a concept that is identifiable and definable and constitutes a whole idea, but also as a philosophy representing a comprehensive way of thinking about man's relationship to the land and how that relationship should be constructively carried on. Multiple use is also more than this. It is also a highly pragmatic tool. Only by use of multiple use as a pragmatic tool will we in this nation stretch our resources for the land to meet the obviously increasing needs the land must supply. These thoughts and ideas were projected by Art Greeley his speech about two years ago down here in the South.* Would you comment on these assertions of a man who has spent almost all of his professional life in the Forest Service? Last year he retired.

VLH: Yes. I think I would agree with at least most of what Greeley said. The part that I recall that I might have some question about is when he talks about multiple use as a tool. Multiple use is not a tool, it is a goal; the policy to be followed in approaching the goal is still not a tool. A course of action that is not implemented with a program or programs of action on the ground, so to speak, still is not a tool. This may sound like quarreling with semantics. But it is this fuzziness in meanings about multiple use that I don't like. I think I know what Greeley meant, and I think, therefore, we probably agree.

*"Multiple Use Practices, Problems, and Opportunities in Southern Forests," speech by A.W. Greeley.

Let me go back and just repeat what you said, namely, that multiple use is a concept. Multiple use is a concept, and there are some parts of it which are not disputed. They are really not in controversy. There is one part, however, that is in considerable controversy. The part that's not is that part that expresses the idea that land is capable of a number of uses and that if you fashion a harmonious combination of uses you can derive a net benefit that is often greater than you can derive with a single use. I don't think many people are going to dispute that.

The part that causes dispute has to do with the application of multiple use. Unless one is a genius, lucky, or more skilled than the Forest Service has been in these last few years of controversy, someone is sure to be displeased with the results. In other words, multiple use in the abstract or as a philosophy of land management is fine, a desirable concept and a noble goal. But, when it reaches the tool level and one sees the nuts and bolts of multiple use in action you had better look out.

What do the displeased interests do ? They used to appeal to the Forest Service directly. Now, however, they are more and more frequently appealing to higher authority--the secretary of agriculture, the President's Council on Environmental Quality, the Congress, the courts. The so-called conservationists--and I don't use that phrase in any way except to point up the fact that those who have adopted it for their own use are giving it a different meaning than it used to have--have greatly matured in their mastery of pressure-group tactics, the political processes of policy formation, and in use of sophisticated court procedures to gain their ends. I admire their newly acquired skills, and in several major projects on which I have joined other concerned citizens, I have been pleased to share in their successes. In the case of the Forest Service my sympathies are with it. I can't help feeling that the service is a victim of the times and circumstances. It was in the path of a broad movement against established production-minded progress and was exhibiting some glaring examples of certain environmental disregards. At the bottom of all these troubles, the critics are fondly pointing out, is lack of attention to proper application of multiple use. In fact, they imply or say that multiple use with the Forest Service has been a farce.

ERM: How do you see the Forest Service resolving this problem?

VLH: I think there is only one way that they can resolve it, and I suspect that they are working toward this as fast as they can. They came to this conclusion, I think, belatedly. But I think they are on the right

course when they say that we have got to have a lot more planning, we have got to find ways of involving the public in the public decision-making. And they are developing these processes right now.

I mentioned, I think, a good case in point when I used the Ocala National Forest as an example. It happens to be the only one that I am familiar with at firsthand because I attended some of the hearings; and I got all of the material sent out from the supervisor's office at Tallahassee, background material that was given out for these meetings. This was sent out in advance to prospective participants so that the groups that were interested in it would read up on it, talk about it amongst themselves; and they all came pretty well prepared. This is the sort of thing I have in mind.

ERM: It is a very complex problem, multiple-use planning and implementation of the land.

VLH: Absolutely. It is far more complex than any managerial job encountered yet in public forestry.

ERM: Perhaps part of the problem is that, because of its complexity, men are in a sense immobilized by fear of getting off in the wrong direction on actions that they propose. Maybe there is a degree of hesitation to push out and really move on implementing programs for fear there is something sinister, a nix in the jam.

VLH: Perhaps. But, I think there was a lot of inertia in getting going on this. As I recall, while I was still in the Forest Service and this legislation had just passed, there was quite a little discussion among the top staff as to how best to proceed. Certainly, the feeling was that we must do something more than we had been doing. The only thing, however, they could really think of to do-- I say they but I'm part of they--was to bring one man in from the field and set him to try to devise broad guidelines that could be sent out to the regions. This went on for a year or two, using up a lot of precious time before the critics normally would strike out at inaction. I don't know what I would have done if I had had the responsibility for the administration of the national forests, but I think I would have been quite uneasy about the developing emphasis by the public on recreation and other forest amenities. Each of us had our own responsibilities, however, and we were very anxious to redeem them, and we weren't reaching out to assume other people's worries while we had plenty of our own.

Contributions of Research Divisions

ERM: How do you feel that the research branch dealt with its responsibilities in meeting this need?

VLH: We probably didn't go nearly as far as we could, but here are some of the things that we did. I remember I got the Division of Forest Economics in on discussions, and we said, "We know very well when you get to the point of trying to devise combinations of uses and considering the best combination possible, this involves alternatives. It involves a methodology that hasn't yet been developed and about which we don't know very much. Isn't this something that our folks in the Division of Forest Economics ought to be thinking about doing?"

I can recall that [H.R.] Josephson, who headed this division, said, "The methodology would be very similar to what we are already working on in Arizona in connection with the Beaver Creek watershed project." The question had arisen a few years earlier as to whether the combination of uses that existed on the national forests in that area were satisfying the needs of the people. The people with acute water problems were hollering for more water, and it looked like they were in the majority. So we had agreed to run a pilot project in which the research branch would do the research and the national forest administration would carry out the physical operations. The regional folks had the tractors, the bulldozers, and the technology to manipulate vegetative covers and build such research installations as we needed. We would lay out the experiments on a large scale, and we'd do the analyses of the data that came in and develop a report.

Josephson was telling me that this had developed into a much bigger job than he had anticipated and that he had one or two economists on it at that time and, I guess, half a dozen other technicians or scientists. It was a pretty big crew. But he thought what we needed essentially was what we were doing there, except for going into more research there than we would do elsewhere; namely, the job was to figure the costs and benefits of various possible combinations. We decided we ought to push the methodology objective and we ought to get into the kind of methodology that the ranger or supervisor's office would need if he were laying out, say, a system of uses for a ranger district and desired criteria by which to judge the best combination of uses or even the best management methods to apply to a given use. So, I am sure that Josephson was working on developing evaluation methodology.

As I recall, we decided that we would do that with our existing funds by shifting priorities. I left in December, 1965, and haven't been in touch with that work since, except to hear that it was being given added emphasis in recent years.

Another specific job we did in research was to supervise--I headed up this project--a big task force to prepare a report on management and natural beauty.* This was at a time when natural beauty was being touted by the administration.

ERM: Lady Bird Johnson.

VLH: Yes, the White House was sponsoring a White House Conference on Natural Beauty. I had been discussing this conference with some of my own people in research as to what we had in the way of findings from our research or observations of national forest practices that could modify silvicultural practices to make them less ugly and to fit in better with scenic attractions for traveling public and recreationists. I found there were quite a few things we knew about.

Soon after that Ed Cliff came into my office; it was after closing hours. He said, "I just came from a meeting over in the secretary's office, and the department is going to be involved very deeply in this Conference on Natural Beauty. All of us in the agencies of the department have been asked what contributions we could make. I have a feeling that we in the Forest Service could make quite a lot. But I'm not sure we could make as good a showing as the Agricultural Research Service can through their ornamental planting and that sort of thing. What do you think about it? Can you guys in research do some things about it, such as prepare a publication on what we know on the subject from our activities?"

I said, "Yes, we have talked about this. This is something we can do, pull together such information as we have." Then he said, "Say, do you suppose you could get a publication together in time for this conference, so that I could take an armful over there and lay them on the table?" It was only about three weeks away. My reply was, "Well, we have done lots of fast jobs, and we've never yet said that anything was impossible. I am willing to set it up and do what I can if you will send the word around that this has top priority, so that when I call for help in the national forest regions or in the Washington office, I will get it." He said, "I'll do it tomorrow morning."

*U.S., Department of Agriculture, Forest Service, The American Outdoors: Management for Beauty and Use, Miscellaneous Publication No. 1000 (Washington, D.C.: Government Printing Office, 1965).

I drafted a note that night, which Cliff signed, that went to every deputy chief and to the regional foresters and station directors saying that we were undertaking this on a rush basis, that I would chair a Washington office committee on it, and that we were already busy developing an organization for--including authors--developing the publication, and they might hear from us in the next day or so by telephone, and would they please respond favorably, if they could, to any request to send people into Washington or do whatever was asked. Whatever had to be done in gathering data and writing had to be done within about one week, leaving two weeks for processing the publication.

I remember, I called in Carl Ostrom early the next morning. He was director of the Division of Timber Management Research, which included silviculture. He was a very able scientist and administrator and extremely good in analysis and report writing. I asked him if he would take on the job of outlining this report, first plumbing the dimensions of what it was that we could do so that we could put it together in outline form. Then I got ahold of Bill [William W.] Bergoffen, who worked in I & E [Division of Information and Education], to help develop and process the report itself. The director of I & E laid out an organization--writers, a production man, a printing man, an artist, and all else that would be required for a crash program.

Carl Ostrom came back within an hour or two with what I thought was a pretty good outline. I said, "Well, we sure haven't got much time to juggle with it. It sounds pretty good; let's go ahead. What do you think about authors?" The next morning we had a list of authors and made the assignments. I think we gave them three or four days only to do what they had to do; that was tight. Soon the first drafts began coming in, and we put editors on it, rewrite people. By the end of the week we had a draft of the entire publication. You probably have seen it; it is a nice job for a crash program. We got the art people and the photograph people together and used the prettiest photographs that we had. We had layout people. Surprisingly to me it took longer to process the publication than to prepare the text of the manuscript.

It came out fine, and I must say we flushed out much information throughout the Forest Service. A lot of it came from the

national forests administration, particularly that on road layout, signing, and beautification along roads. Our Research Division of Silviculture did the section on how to modify silvicultural practices in those areas that would be most critical from the traveling public standpoint. We emphasized the modifications that could be made in cutting methods to protect natural beauty and explained where and how this could be done. That report was completed in time to be taken over to the conference.

Incidentally, it got a great deal of attention and some very fine compliments from the White House. Also, I have an autographed copy from the secretary of agriculture commending me for the top-quality job that we did in a great hurry. Bill Bergoffen, Clint Davis, and many more in I & E made the publication possible in record-breaking time and still wound up with a report of distinction. The authors of first drafts and of ideas were too many for me to even try to keep up with their names.

If the Forest Service had applied those things that we already knew and had built upon them as a foundation, its problems might have been fewer in the years that followed our report.

I have talked at length about two specific projects that bear on different aspects of multiple-use management. Let me now mention some other areas of research in more general terms. We had three whole research branches working on people-oriented research--watershed, wildlife habitat, and outdoor recreation problems. These were all major activities in the national forests and elsewhere on public lands. Solutions to these problems often resided in part in modifications of timber and range management practices.

In addition, we had much of our forest engineering research, our forest fire research, and probably other research activities, which I can't recall at the moment, aimed at protection of the environment. All of this research contributed to the solution of multiple-use problems. This research may have represented about one-third or more of our total research program at the time I left in 1966. By criteria of that time based on a scale of values considered important by the public at large and by the critical writers, we were doing all right. By criteria based on present-day values, that effort falls short. That is why I said we were not doing enough. That could be unfair.

I suppose the scale of values that would measure what people want from forest resources--and assuming this is within what forests biologically and ecologically are capable of producing--began to change noticeably about 1966. Up to then outdoor recreation had had a gradual run, and natural beauty had built on it. By 1966, however, environmental quality was being questioned. In the immediate years that followed, the volume of speeches and writings increased until by 1969 the outpourings came in torrents.

If the Forest Service as a whole or forestry research as a part has been remiss, it is due more to lack of sensitivity to the rapidly growing changes in people's wants than to what was going on at the time I knew these programs best, that is, during my time in the service. I think the research program along with national forest and state and private programs could have changed its emphasis sooner and faster during the last several years. The organization's antennas could have been kept more sensitive in monitoring the external forces and influences and the signals could have been better heeded in program adjustments for direction. But this is hindsight; admittedly, it is sharper than foresight.

One more thought. Once a changed direction is decided it is not a simple matter to get the change into effect in the far-flung Forest Service, or any complex organization for that matter. It takes aggressive follow through and a firmness that signifies serious business of high priority. You have to say, "This has to be done. We know this is critical. It has the highest priority."

ERM: And if it isn't done and doesn't meet standards of excellence, heads will roll?

VLH: Right. Well, you don't have to go that far. Once the chief and the other leaders in the Washington office issue instructions, usually it's after they have called all the field generals in and have had a pow wow. What needs to be done becomes agreed to by the whole group that this and that must be done and so on. So the chief sends a letter out and says that we have just had this meeting, that agreement was reached on a new emphasis, that changes would receive the highest priority, and that we would be around to see what is going on. The deputy chiefs follow up with more detail; the division directors with still more. Then there must be vigorous follow up and an accounting of progress against goals. All this would appear to be about what Ed Cliff and the rest of the top staff are doing now. I see a new day for the Forest Service in the offing.

Multiple Use: Public and Private Ownership

ERM: You told me yesterday that industry jumped upon the multiple-use bandwagon soon after the act had passed and advertised that it, too, was practicing multiple use. Now what does multiple use mean to industry as compared to its meaning to public agencies?

VLH: In the industry sense it means, in general, that timber production gets primary place and the other uses are given secondary or lower places in the multiple-use scheme. These other uses are admitted only so long as they do not cause undue sacrifice to timber production.

In contrast, in the national forest sense it means each of the five major uses--outdoor recreation (could include wilderness), range forage, water, fish and wildlife, timber--will be considered without favor for one over another, and that a combination of harmonious uses will be decided for a given time and a given unit of land on the basis of what appears to best meet the needs of the people.

Other public lands are likely to have multiple use in a sense different than national forests. In wildlife refuges, wildlife habitat gets top priority; other uses are often fitted in so long as they do not seriously impinge on the wildlife objective of that class of public ownership.

The controlling factor in the meaning of multiple use is ownership objectives of the land in question . Given private ownership, the objective is profit. Given public land ownership, the legislative bodies have specified the objective and it usually is not profit.

One should not sell short the secondary position of uses. Industry's claim is valid. It is practicing multiple use. But it is a different pattern of multiple use than that of national forests. The public does not, as a rule, realize that there is this difference.

I would say that on all of industry's lands anything that is profit-making would have to be given primary consideration. This could be timber production or it could even be use of the land for vacation homes--whatever is to be the highest use in terms of profit. That's the kind of multiple use that industry talks about. This isn't the kind of multiple use that the Forest Service speaks of on the national forests where on any one given unit, one use might

be primary, but on an adjacent unit of a different character, another use might be the primary use.

There is a great deal of controversy in this matter of dominance. The neo-conservationists don't like mention of dominance at all, particularly if you are talking about public land, such as national forest land. What they don't realize, I suspect, is when you get right down to the nitty-gritty of practice, a treatment to be applied to a given unit, it very well could happen that one use or the other becomes the primary use. That use gets favored treatment. The use could be recreation or even wilderness. It could be wildlife habitat. It could be timber. Seldom would one encounter a situation that all five uses would be given equal weight in application; only equal weight in consideration before application is decided. What conservationists seem to fear is that if dominance is accepted as a factor in land use planning and zoning, the balance will too often be tipped industry's way. On the other hand, industry feels that the conservationist's idea of equality of uses is always slanted in favor of preservation of natural or near natural conditions. Production and efficiency to conservationists have become dirty words.

ERM: Doesn't this variance of meaning work to destroy public understanding of the term multiple use?

VLH: Yes, and I think that's what the controversy is pointing up here, that it is a very complex thing and that there isn't near as much magic in the term as proponents of it have implied. Multiple use is just about as difficult to define and as complex to put into practice as conservation.

ERM: I was just going to say that.

VLH: Who can define conservation? It has a tremendous amount of emotional pull, hasn't it? So does multiple use. That's why everybody is for it, particularly if their notion of it has it tipped their way.

Involving the Public in Multiple-Use Decisions

ERM: Conservation, multiple use, tree farming, forestry, sustained yield are all well-known words or terms, but they have become

less meaningful and perhaps even confusing to people, and they are becoming less effective as rallying points for positive action to meet priority in public needs. Are we in danger of conjuring up a succession of slogans, catch words, time buyers, to hold the public at bay, creating perhaps an image of progress that is more favorable than fact?

VLH: No, I don't fear the danger. To be sure our language is becoming fuller with slogans and catch words, especially since the environmental movement got underway in full swing. Some of this trend may be attributed to the Viet Nam War and to the impact of it and other crises on the domestic unrest in this country. Words and phrases have been conjured up both to cope with the unrest and to agitate it. The result has been a feeling on the part of the public of considerable duplicity, if not mendacity, involved. The fashionable term for this feeling about progress in governmental programs is credibility gap.

One reason why I don't get distressed over the kind of words you have mentioned--as conservation, sustained yield, multiple use, etc.--is that there are countering slogans and phrases being developed and the net result is that none becomes a phrase you could hide behind for very long. To illustrate, foresters invented the term sustained yield before this country was born; the term has a warmth about it and we have used it in professional circles for many years to mean a continuing forest crop that need never fail in its yields of goods and services for the benefit of society.

The neo-conservationist doesn't like the implication of cropping in the term sustained yield. He feels that a forest that is planted or otherwise regenerated by man and then cut by man requires a name other than forest, a name akin to corn cropping. A true forest, he proclaims, is a much less disturbed area, a natural area or a near-natural area in which excellent forestry would be single-tree selecting, a taking out of the oldest and of the dying trees.

The headline-hunting scientist wants in on the act, too. He pontificates that, given the proper length of time, perhaps a few billion years in some cases, any natural resource such as oil, coal, timber, or whatever, is capable of sustained yield; therefore, the term has no real meaning.

All this is quite confusing, of course, to the man in the street. I suspect he is becoming distrustful of both governmental and pressure-group antics. The pressure groups of late have become

quite expert in creating new terms to help out in their stalling, coalition, or other tactics designed to win time or votes for their causes. The terms de facto wilderness, concerned citizens, etc., are examples.

In fact, I would venture to say that the modern, sophisticated pressure groups and their conservation-columnist sympathizers have the talent and the bent to far outstrip governmental agencies in creating catchwords designed to confuse, mask, or otherwise make hay for their causes. They know the act of swaying public opinion, and they have a vast store of tear-jerking, emotion-pulling words to apply as the need requires.

So, in the face of such unequal competition and in view of our constitutional rights to free speech there is only one practical course for government agencies to take: do a good job on the ground and invite the public in to see the results. Don't depend so heavily on telling, but more on showing.

ERM: How are you going to get more public exposure to what you're doing?

VLH: I don't know any other way than--and there is a lot of work involved in this--organizing meaningful meetings with groups with lots of advance preparation for them, so that they can get a look at what you're doing. This is probably a lot more work for national forest folks than we imagined during my time. But the need then was not so great. Now it seems a must. I don't know of any other way. I think this is going to add to the cost of doing business on the national forests. This may be one of the deterrents for the Forest Service; the reason they haven't gotten into it earlier could be that it would cost more money than the approved budget would support.

ERM: I think, too, there is a tremendous need for creating demonstration areas or outdoor museums where the public can come and see without being hard-sold. You can come with your family to an area and see what's going on easily and feel it in your bones, through your eyes, and your senses, rather than having it dinned at you by loudspeakers or too much pressure from people who have got their own axes to grind. This is what makes the public, I think, feel a more personal interest in and responsibility for what should be done in our forests.

VLH: I think that Ed Cliff was getting at the implementation of this bigger job of involving the public in demonstrations as well as in meetings on decision-making, when he said recently that the Forest Service

has got to have a rearrangement of priorities. It needs to get quality, get a balance in the overall program. In other words, he was saying that we can't have just a great big timber program and a very small wildlife habitat program and a small recreation program, because these two last activities are now among the biggest in the national forests and they are going to cost time and money to plan for and operate. I would have been happy if Cliff had added that the Forest Service was going to have to set aside a lot more money and effort in organizing ways of presenting itself to the public, so that the public gets a chance to better see what is being done and better consider the problem at the time of planning, before the Forest Service makes the decisions.

Industry and Multiple Use

ERM: I suppose people in industry would say to that, "Hold it, don't diminish your timber operations so radically and so drastically because we are now confronted with the larger demands for timber of the national forests in order to meet these growing public demands?"

VLH: Yes, I'm sure they would say that.

ERM: They would say that right away.

VLH: I'm not sure that industry has been convinced that timber lost its dominant position as a use on the national forests. I suspect that the forest industry people diminished their opposition to the Multiple Use Bill on the feeling that it probably would pass anyhow and that by skillful application of the several uses you could always keep timber in a rather favorable position. I don't think they anticipated the problems that came as a result of the Environmental Quality Act.* I don't think anybody did. Now they are accusing the Forest Service of buckling under pressures from the Wilderness Society and the Sierra Club and the other special

*National Environmental Policy Act of 1969, ch. 55, 83 Stat. 852.

interest groups interested in nontimber uses.

ERM: By the same token, I suppose, these other groups could say, "Well, yes the Forest Service responded most positively to your demands when you were the squeaky wheel calling for the grease." Now it's another wheel that's squeaking, and it's getting greased.

VLH: What precipitated the big controversy here, I think, was the legislation proposed by industry. This is a case where I am sure the source of the idea in the Timber Supply Bill originated with industry.* The Forest Service responded favorably to the idea of more intensive timber management.

ERM: Increasing the allowable cut?

VLH: Not necessarily. The Forest Service had in mind an increase in the amount of money going into road building and timber management with the idea that they could eventually increase the allowable cut and still keep on sustained yield. This scared the pants off of the conservationists because they felt, and probably rightly so, that this would mean that timber logging would push up into the de facto wilderness areas before they had a chance to have their say on whether those areas should be put into wilderness classification. Therefore, they were against the Timber Supply Bill, and they have been able to conjure up all kinds of reasons why they were against it. They are a pretty imaginative group, you see. Logging in those areas is going to ruin ecology; it's going to do all kinds of dire things. If you come right down to it, really, what they were concerned about was ruining potential wilderness areas.

Their concern took the form of chain reactions. It precipitated the outcries about clear cutting. It generated the allegation that multiple use in national forest management was being ignored. True multiple use would not allow intrusion of logging into de facto wilderness areas, not allow clear cutting. I think all these actions were connected. I think they were generated because of and as a result of the introduction of the Timber Supply Bill.

You know, I can't help but feel a little sorry for the forest industries. It seems like every proposal they make boomerangs on

*National Timber Supply Bill, S.B. 1832, 91st Cong. 1st sess., 1969.

them, even when they make one in the greatest of apparent sincerity. You may recall that back several years ago they advocated timber production to stabilize communities. This was not an ignoble thought for the 1950s. It had a sympathetic following then. It was to involve more intensive forest management on their part in the West as well as in the national forests of the Pacific Northwest. The object was a more stable base for employment and for the affairs of the communities. But the Forest Service had objections to industry's campaign to stabilize communities especially as it related to national forest timber management. The Forest Service did not want to be pressured into increasing the allowable cut beyond planned sustained yield. Controversies then developed over rotation ages, scaling, and other national forest timber sale practices. This period was too early for the neo-conservationists. Had they been around then they might have found something to applaud about the Forest Service.

THE MODERN ENVIRONMENTAL CRISIS

Regeneration on the National Forests

ERM: Is the Forest Service keeping pace with the replanting, regeneration?

VLH: No. There is no doubt about a lag there.

ERM: Why is the Forest Service behind schedule on this?

VLH: First of all, let me say, there was a tremendous backlog of areas in need of planting due to bad forest fires and to failures of regeneration after logging in some areas, but, mainly, I would say the cause was the large destructive fires. We hadn't made a great deal of progress on the national forests in planting up these areas. We had a line item in the budget for planting, but it was never enough. I'm not sure we even requested enough, and if we had, why, that amount surely would have been trimmed in the budgetary process.

ERM: So the responsibility is partly yours and partly the Congress's?

VLH: I think the responsibility probably could be shared by the Forest Service, the Bureau of the Budget, which is the arm of the White House, and the Congress. But, basically, I think you would have to say it lay with the Forest Service, which is the agency that rightfully ought to bear the responsibility for aggressively seeking adequate funds in the planting. I don't think the Forest Service ever protested enough over the failure to keep up with the tree planting needs. I think that if the Forest Service had gone to its friends in the Congress and said, "Look here, we're heading for a lot of trouble. We're getting a badly unbalanced program. We're selling timber like mad, but we are doing far too little in assuring new stands of trees. We've got to keep up our tree planting in order to maintain the national forests in good forest condition." Had we done this the results might have been different.

In addition to an inadequate tree planting program, another program that was also behind that which was really needed, was timber stand improvement. The budgetary allowances for this activity were also deficient. To make matters worse for the denuded areas, timber stand improvement of existing stands was sometimes favored over the planting of trees to create new stands. The reason

for this shift was economic. Timber stand improvement results in a higher return on the investment in the form of yield of usable timber products than does planting. While some shifting of funds from planting to timber stand improvement went on in those budget situations in which a choice could be exercised, the plain facts of the matter are that there was far too little money for either planting or stand improvement.

The imbalance that Ed Cliff has been recognizing rather pointedly in recent years--in 1970 and 1971--refers in part to planting and timber stand betterment inadequacies. These, together with other programs, such as in wildlife habitat, watershed management, and recreation, were all inadequate to needs compared with timber sale programs. You may have seen his memorandum to field offices on this subject of program balance. His memo said that it was imperative that the programs for the national forests be in balance and failing the granting of a balanced budget, which he was requesting, the instructions would be for the field man to achieve needed balance by making shifts in those funds allowed, unless the Congress or the White House specifically prohibited such action. The memo said the Forest Service should curtail timber sales in the absence of a balanced program. The thought of cutting down on timber sales in favor of other uses made the forest industry pretty unhappy. You could say the industry sort of raised hell about this memorandum of Cliff's in some of the industry magazines. His memo could have been one of the main bases for the industry allegation that the Forest Service buckled under pressure from the conservationists.

Industry versus the Conservationists

ERM: Yes, but isn't industry vulnerable on the issue of selling logs to Japan? Isn't that a weak point in their argument?

VLH: Let's say this diminishes the strength of the argument that more timber is needed to build houses in the ghettos. But if we say they are doing the wrong thing, I'm not so sure. If I were in business to make a profit, and I could make more by sending logs to Japan, and there was no law that forbade doing it, I think I would do it. I mean, I don't think I, as a businessman, would have a moral duty by myself

to look after the rest of the country. At the same time, if a law were proposed to set a strict limit on what could be exported from private land, I wouldn't object to that either. Then all of us would have to follow it.

But as I understand it, the industry has taken a strong stand against putting legal limits on what might be exported from private land; at the same time they were all for, or at least they were agreeable to, setting limits on public land. That's where it stands now. There is a limit on how many logs can be cut and shipped to Japan from national forest lands and from other federal lands, but there is no limit on logs from private lands. So what happened was a good bit of what Japan wanted came from the private sector to make up for the curtailed shipment from public lands.

We did mention briefly awhile ago that in the controversy between the conservationists and the timber interests the conservationists were accusing the timber interests of duplicity when they claimed that their main concern was producing this timber so that we could get ahead in meeting housing goals. This was at the same time all this other business was going on of devoting some of their lands to recreational use, that is, to second-home development, and selling logs to Japan. The conservationists were saying, "This isn't very good evidence of your sincerity in your argument." On the other side, the forest industry was saying that it thought there is a plague in the conservationist house, that their main interest is getting more wilderness areas. "Your main concern," accused forest industry, "is that we might move into some of the areas that you've got staked out to become wilderness."

ERM: Yes. The element of selfishness involved in the demands of the relatively small segment of the public that is deeply concerned about wilderness is not quite as manifest to the general public as, let's say, the time-honored muckraking image of the devastator, the exploiter.

VLH: Spoiler of the environment.

ERM: That's right. I sometimes feel, when I get into conversations with ardent preservationists, that they are very much like the individual or group represented in the old bit of doggerel that goes, "We are the Lord's sweet chosen few; let all the rest be damned. There is plenty of room in hell for you; we don't want heaven crammed." In a sense, I think, there may be an element of truth in its application to them because they do constitute a very small part of the public. That's

not to say that those who never use wilderness don't derive some benefits from the existence of wilderness. But I wonder sometimes whether the selfish shoe is only on the foot of the commercial users?

- VLH: To hear the propaganda of a special interest or pressure group, the selfish shoe is always on the foot of the other party, on the opposition. This is not unusual; it is, in fact, to be expected, considering the pattern of behavior for a special interest group located at the extremes of the spectrum of interests. I am thinking here of a spectrum with industry at the far right and, say, a neo-conservationist group of the preservation faith at the far left. Their tactics are the same. First they associate themselves with some well-recognized, unselfish movement or idea designed to give their views and own goals a moral superiority with the general public over those of dissenters. Then from this disarming position they proceed to build public-opinion pressure for their cause. The preservationists have become highly skilled in their art, great artists to be admired for those of us studying the art of pressuring public opinion. They know all the old catchwords and continually invent new ones for that stuff out of which comes emotional appeal.
- ERM: That's right. They utilize it in a very effective way, the pronouncements and the publications of the so-called doomsday writers, "Doom is twenty or thirty years away." And, "The sea will soon be one more slop bucket of man, with everything in it dead or dying." I know there are pretty raw evidences of man's ruination of his environment, but I can't go along with the rash projections that are floating around so freely these days and that seem to be so currently popular with editors and the commentators of the mass media. There is a seeming uncritical acceptance of these pronouncements among members of the fourth estate that is a little disturbing. Do you see it in those terms in your own observation?
- VLH: Yes, I do. I think you're right. I think there is a liberal element--I call them that; I don't know whether that fits them or not--within which a certain amount of elitism goes along with this business of putting down those who are for efficiency, for production, for economic progress, or for anything that would affect environmental quality. To associate oneself with doomsday predictions is a way of being "with it." I think it's sort of a badge of distinction to associate yourself with that sort of thing. A lot of people who don't know very much about pollution and, perhaps, care less appear to want that badge pinned on them.

Unrest on the Campus

- ERM: Is this a condition that afflicts the campus to a considerable extent?
- VLH: I'm sure it is. I think you find on campuses, particularly at present, fertile ground for cultivating the idea of environmental crisis. For outsiders, who are just looking for a stage to practice anything that will focus attention on them, the campus is a responsive community. They can always attract a small but highly responsive audience of students and a few professors. For insiders, the so-called liberals, the campus likewise is a responsive community for their bid for attention. We have had here in Florida a succession of campus issues that have generated marching, yelling, writing, and occasional rioting. The issues have been the Viet Nam War and all its variants, racism charges, alleged violations of personal rights, and protests against industry's rape of the environment. The chief element in the protests is always blame fixing, and the target of the attack is always those who wield authority.
- ERM: How much of that do you think is linked to a deep-running attack upon long-lived institutions, the capitalistic system itself, the old established way? These institutions are under stern attack by young people who are all geared up, it seems, to fight the battle in any way they can.
- VLH: Yes, I'm sure that's involved. We have speculated about a number of things, including the Viet Nam War, the frustration over the racial problem, the difficulty of getting jobs nowadays. There are a lot of things that frustrate these students, and I think it creates in them a desire to strike out at something.
- ERM: As a vehicle for an absolute reshifting of power?
- VLH: Yes, yes. That's right.
- ERM: In a sense, I think, they feel alienated, and if they are going to get their kind of world and their kind of society, it is only if the other one is wiped out or washed away or eliminated or overwhelmed.
- VLH: Yes. It seems to me that there is even a more basic consideration than the one we have been talking about here that is causing this. I like to refer to the status of our science and technology in which we have made such rapid progress over the last few years and then take a look at our social sciences and the status of our social

institutions and see the great gap that we have created there. I think here basically is the real problem. Our social institutions haven't kept pace. Our system of government, our systems of dealing with poverty, dealing with a whole lot of things, haven't kept pace. And our technology is creating now or storing up in the future more and more misery for a lot of people.

ERM: How could this be otherwise when we have been enamored of the great god, gross national product? These are the things that we have been worshipping. We haven't been really pouring our national treasure of intelligence or of money into these other areas. The mainstream of our wealth has been pushed into the technological realm.

VLH: Into growth and development.

ERM: Right. So it was inevitable that this would develop.

VLH: Yes. We have always talked in terms of a bigger population, a bigger payroll, a bigger number of industries around our towns and hence a bigger tax base.

ERM: And always being number one, whether it's in football or in production of any given product the world depends on.

VLH: Basically, that's what is wrong with us. Instead, we might better say "Let's give number one now to being ahead in safeguarding our environment."

Crisis in Forestry Education

ERM: The crisis that forestry faces today is certainly not one of lack of technological know-how, but one of placing or understanding its role in society and relating to these changes that are taking place, recognizing that it has made tremendous contributions to technological and other developments in the past. Maybe it has now to shift its course a bit, put larger emphasis on dealing with these other areas, or if it doesn't some other profession or group will take its place as the generation that is now in its

twenties and thirties comes into greater political power.

VLH: I think some of the process of shifting course is going on now but it is painfully slow. I think you are correct in that the forestry profession has been losing ground, and I would place the main decline as beginning at the time when these other forest uses that we have been talking about began to take on emphasis. Here is what seems to have happened. Let's take the educational field as an example.

When I was taking forestry in the 1920s we considered all of the problems that were then relevant to the management of forest land. Range was quite different from timber management, but that didn't make any difference. You got a forestry education that included range management as well as timber management or anything else that was part of land management. The change came about the time of the end of World War II. At least, that is the period when departmentalization, fragmentation, and polarization of views in the forestry educational field seems to have begun in marked degree.

The sequence of splitoffs from the main stem of forestry, leaving the stem as the resultant residual becoming narrower with each successive separation, was about as follows. Wildlife management first found a welcome home in the forestry school from its former position in the department of zoology where the emphasis was more on biology than on management. The wildlife faculty and students became absorbed in an identity problem. To resolve this problem the school created a separate curriculum of wildlife biology and management, sometimes a separate department. The wildlife department became a wildlife ecology department with an absorbing concern for environmental quality in the broad. Its natural enemy became the forestry residual in the same school and the forestry profession elsewhere.

Outdoor recreation as a program offered in the forestry school had a similar history. The school evinced interest in recreation and first offered it as an option in the forestry curriculum. Then certain recreation instructors from other departments were transferred to the forestry school. The problem of separate identity for recreation and its solution followed in the same pattern as that set by wildlife. Recreation became a separate curriculum, often with department status. Range science and management, not to be outdone by the other independents, followed suit. Watershed management, somewhat more reluctant

to cut loose from forestry, has in some instances clamored for and gotten independent status. Meanwhile, the forestry schools got into the M.S. and Ph.D. business on a larger scale. Specialization in the biological sciences resulted seldom, if ever in specialization in the managerial and social sciences.

Throughout the splintering and specialization processes the forestry curriculum became a narrower and narrower residual whose chief concern was timber growth, yield, harvest, and the tree life processes. The school became a loose federation of independent departments whose faculty and students often found themselves competing for attention by airing in public their differences and by the shooting down of each other. In an attempt to remove some of the cause of complaint by the nontimber-use departments the school changed its name to signify broader coverage than forestry, it would be explained. Thus a school of natural resources, of forestry and conservation, of forest resources, and the like resulted. But the divisiveness and specializations continued. The education of a forest manager in the context of coordination of multiple uses continued to be neglected.

Now, what I have said has, of course, been overdrawn to make my point that we are now turning out students from the forestry school with perhaps much less appreciation of the management of the whole forest and its many uses than formerly. Forestry as I was taught to look at it was a very broad field indeed. Specialization, as our knowledge developed in this broad field, was inevitable. Unfortunately, however, in the process the wholeness concept got largely lost in the development of professional forestry education.

- ERM: Now there are a lot of specialists, each one of which has his own tunnel-vision of the total scene, at a time when what we need is broad generalists who can see the total picture and implement a multiple-use concept. Isn't the only way you get multiple use now and in the future by committee, a whole bunch of specialists sitting down together and grinding out the problem?
- VLH: Yes, but I think there is room in there, too, for a professional forest land manager. This is one thing that I would do at a forestry school if I could exert that much influence; I would create a specialty--if you want to call it that--in forest land management equal in importance to say, forest genetics, or timber management, which have been getting so much play as majors. I would make it

possible for the person who would be a forest manager to get the kind of education that would be strongly oriented toward the managerial and social sciences, so that when he goes out into practice he has an understanding of all those things that go on in forest land use, plus the handling of people and their wants. Some like to refer to a person trained this way as a generalist. But why is he not a specialist, too, in the same sense as a person with specialized education in any field.

ERM: And by his social science training he would be hopefully more responsive to changes in the mainstream of public thinking.

VLH: Yes, he should be responsive to people wants. We've got to find some way of attaching attraction to this sort of training. It doesn't have the dignity now, say, that a Ph.D. in forest genetics has. He wouldn't be called a scientist; his forte would be the art of management and he probably would be called a generalist. There are people coming out of business administration, public administration, political science, and law with bachelor or higher degrees, that will be competing for the jobs as forest land managers unless the forestry schools make a determined effort to produce such products themselves. You must do something in the natural resource field to make this forestry-trained manager feel and actually be superior. He should know many things that the others know; in addition, he should know multiple-use forestry. That means you've got to crank into the educational programs of the forest manager those things that will give him an edge, so that he can develop prestige as a forest manager. A man such as that, I think, could chair a committee of specialists and do a first-rate job and be respected as a man trained in the managerial sciences over and above a certain amount of biological forestry.

Instead, what do we do? We take a specialist in range management, timber management, or in recreation or an ecologist as the conservationists say we ought to do and tell him, "Now, you're the manager; you develop teamwork among these specialists and put together all their ideas into a workable system." The reaction of the specialist is apt to be, "What the heck. The guy may be a pretty good ecologist or a pretty good wildlife specialist, but he doesn't know much about management per se." I think that's where we have fallen down. We haven't developed, really, a profession of forest land managers.

ERM: Higher education is moving too slowly to meet this need. Do you find good evidences anywhere that is is moving now more effectively in any of the schools?

VLH: I think some of the schools are trying harder than others, not only to produce better trained students in the managerial and social sciences, but also in producing better trained foresters in general, with specialization delayed beyond the bachelor's level.

ERM: Which ones do you see as doing that?

VLH: I like the progress being made at Berkeley, California. I like what I read that's going on at Yale. I would put these two schools ahead, and there may be others trying equally hard to change. I could name quite a raft of them--I don't think there is any purpose served in trying to do that--in which very little progress is being made. Instead, they appear satisfied to teach as they have taught in the past, allowing their forestry curriculum to erode by the pressures of splintering and specialization. I agree with this thought, expressed so many times by others, that the subject has become boring, that not near enough progress is being made in revamping our professional education to meet the new challenges being made on forestry. It is a pity that the thought is still true in spite of some progress.

The forestry schools in the South have been slow, as a rule, to make bold changes. Most of them have been heavily oriented to training students for industry employment. However, within the last couple of years the School of Forest Resources at the University of Georgia has developed a completely new curriculum that has as its focus the preparation of persons who have the background and potential to function as decision makers in forest land management.

Also, we here at the University of Florida are engaged now, through a curriculum planning committee, in a thorough overhaul of our teaching programs in the School of Forest Resources and Conservation. I anticipate out of it will come much more emphasis on the forest and range ecosystem, on multiple-use management of resources, and emphasis on providing a strong option, beyond basic core requirements, in the managerial and social sciences.

Needs in Research Planning

ERM: Is there a need for a new national program for forestry research, such as [Earle] Clapp, [R.C.] Hall, and [H.B.] Hastings

authored back in the twenties, or has this been done?*

VLH: I don't think we need that kind of program again, which was a very generalized statement of the forestry problems to serve as justification for legislation. We don't need new legislation for research in forestry. What we do need, however, are periodic revisions of the kind of ten-year forestry research program that was initiated during my time, in the 1950s. That program was revised once before I left the Forest Service in 1964 and has been revised at least once since I left. It is imperative that such programs be kept up-to-date as to problems and needs. It seems to me that the research needs have been rapidly changing in the last few years.

The important features of the kind of planning that went into these later projected forestry research programs over that in [Earle] Clapp's time are the factors that relate problems in need of research to budgetary requirements and organization placement. Thus, one big achievement over previous programs was that, in addition to outlining the problem areas in need of research, we transcribed those needs into number of scientists needed, kinds of scientists required, number and kinds of laboratories needed and where to be located, and size of money, or its equivalent in manpower, budget required on a year-by-year basis over the ten-year span. Such a program greatly facilitates implementation.

During my day the Congress looked upon such planning with favor; the Bureau of the Budget, however, looked with gradual misgivings as pressure for implementation began to assert itself. Program planning that makes it easy to build public pressure for increased funds is usually frowned upon by the administration. But beyond the financial, budgetary aspects the kind of planning we did had much merit. It required a great deal of detail down to the field level. It required a searching review of priorities of organizational actions and called for a sophisticated consideration of what seemed possible of attainment.

In summary, I don't think we need additional enabling legislation for federal, Forest Service research at the present time. I think we do need however, rather constant attention to priorities

*Earle Clapp, A National Program of Forest Research, (Washington, D.C.: American Tree Association, 1926).

of problems on which to do research. New problems are continually appearing and old ones don't stay resolved. The best way to get at the needed changes in emphasis is to have projected programs that call for thorough, systematic revisions that are to be made periodically, certainly at intervals not to exceed five years.

Students in Forestry: Then and Now

ERM: You were a young man in the twenties, coming out of college and going to work as a forester in 1927. How do you compare the climate for the young graduate today to what it was then, not just in terms of job opportunities that might be available, but in terms of freedom to really cut a track and express himself freely? Have conditions surrounding the work in the field changed very radically since you were fresh out of college?

VLH: I think the biggest change has been the disappearance of the forestry frontier as we knew it in my day as a student. It was an exciting and challenging field with few well-charted courses when I entered practice. There was both romantic and professional appeal to tackling new ideas and a great sense of achievement when successes were scored, which were admittedly easier in the early days than they have become as years went by.

The modern student doesn't seem to feel this challenge in forestry. In fact, he doesn't seem to think of forestry except in terms of a job by which to make a living. If he is inclined toward service to society he is apt to think in terms of ecology and environmental impact work. Forestry has lost much of its former glamour for students as a professional field beyond grubbing out a living. At least that is the way it looks to me from where I sit.

ERM: I suppose that one of the big differences is that neither federal forestry nor private companies were the gigantic organizations that they have become. The young man coming out of school is just a number way down in the line, and there are not the same glowing opportunities, at least not in the eyes of a lot of graduates that there were back in the twenties and thirties. That is not to say there are not challenges; the field in which you make

your name is on a different frontier than it was then.

VLH: There is this difference, though, between then and now. When I got out, conservation and forestry were thought of in the same breath, and forestry was an honored term and to feel that you were a part of it was a good feeling. Now, for our students, it's being slammed in every direction by the so-called environmentalists, particularly, by the press. The public image of forestry is that it is in the dog house. Why does a student want to associate himself with something that has got a stigma attached to it? So he looks for something that is on the ascendancy, something that people revere.

I am told by one of our professors here at the school, who is closer than I am to entry of students into our school, that we are getting quite a number of students who want to be ecologists. They are coming to us because they feel we come closer than any other department of the university to offering ecology in applied terms, particularly as we offer it in our wildlife ecology program. Accordingly, wildlife ecology has blossomed since I have been here. I think it had ten or twelve students when I came, but now it has probably a hundred or more.

Many of these students know that they are not going to get employment in the field of wildlife management as such. But they feel that they have gotten enough training in ecology so that they can qualify for most any kind of an environmental job. And national projections for fifteen or twenty years from now indicate that the demand for foresters and wildlife managers is not going to be much greater than it is now, but the demand for ecologists or people in the environmental field is going to be way, way, up yonder. Somebody may be doing wild estimating. I have no good way of knowing whether such estimates will hold or not. Whether it is the opportunity for jobs that these estimates provide or something else, the reaction of students in Florida to the ecological challenge is significant.

ERM: Idealism was no less a factor among you and your contemporaries coming out of school than it is today. Everybody wants to go with Mr. Clean and wear a white hat and ride a white horse. Nobody wants to be on the side of the black-hatted fellows. Fashions in public ideas about who wears the black and who wears the white have changed.

VLH: They have indeed. And right now probably the change is as far away from the field of forest conservation as I knew it when I got out as it could possibly be.

ERM: A pretty grim distortion.

VLH: I had hopes at one time that we could and would change the image of forestry, put a little glamour into it, and get it off the timber management center. I injected that into a speech that I made out in Berkeley, I believe it was in December of 1964.* I don't know whether you have seen the published version of it or not.

ERM: Yes, we have it.

VLH: At that time I honestly believed that we could change the public image of forestry by making it an umbrella term for all forest uses. I'm not so sure we can do it now. I am afraid the time has passed. You know, there always comes a time when instead of trying to put a new face on the old thing, it is better to start all over again and give it a new name and new content. The new content may come easier under a new name.

Fragmentation of Forestry

ERM: What would you say about the role the Society of American Foresters has played or has failed to play in this whole matter?

VLH: I would say, first of all, that one properly should look to the professional society as a positive force in shaping the public image of a profession. By definition and public expectation the professional society, through its programs, reflects what the profession stands for and the extent to which it serves public needs. Now, against this standard we can look at the Society of American Foresters.

*V.L. Harper, "The New Forestry," Speech delivered at the Fiftieth Anniversary of the School of Forestry, University of California, Berkeley, 5 December 1964. Reprinted in Journal of Forestry 63, no. 10 (October 1965): 752-754.

I think we would have to say that we see in the SAF's past much more of a passive role than a positive role in shaping the profession. For example, the specialization that developed in forestry, followed by separation to form a new society, leaving a forestry residual that became narrower in its scope with each successive professional split only mirrored that which was happening in the forestry schools. The society has set standards for accreditation of forestry schools but professors as members of the society have dominated the accreditation process and criteria.

Other examples of a passive role could be cited for the SAF in the way the society has been influenced by the blocks of employer interests expressed through employee membership. Public employee members versus private employee members were looked upon too often as divisive factors in the affairs of the society. For many years the society as an entity was unable to rise above its membership factions to bring a collective leadership to bear on the society's functions that was bigger than a mere summation of its membership parts.

It is difficult to say at what moment this change from a passive to a positive role for the SAF came. It has been a gradual transition over the last six years or more. The biggest noticeable changes have come in the last two years. Now the SAF appears to be definitely embarked on a positive role of broadening the public image of forestry, of leadership in forming a federation of renewable natural resource societies, of participating in the process of policy making, and, above all, of public relations programs aimed at explaining to the public how the profession of forestry is fulfilling a public need.

Harkening back to what I have said earlier about forestry as an umbrella term or, failing that, a new term under which the forest-use separate professions could unite, I have been pleased to see the recent coalition between the SAF and several other societies in the natural resources field.

I knew from earlier conversation that Ken Davis and I had in 1967 that he shared my view that something positive must be done to make the SAF a more hospitable home for the many specialties left in the forestry profession and, beyond that, something positive toward an umbrella organization to win back the close association of timber use with those other uses that had already split off.

Big steps toward both these goals were taken during the 1970 and 1971 presidency of Davis. I think he has been an outstandingly good president of the SAF. He has presided over a major move to give the Society of American Foresters a definite, constructive role in reshaping the forestry profession in education, practice, and in the eyes of the public.

I am tremendously interested in seeing forestry societies the world over make themselves more useful to their memberships and to their publics. I think their potential for doing this has as yet scarcely been tapped. As you know, I am currently the president of the International Union of Societies of Foresters and dedicated to the improvement of societies' roles.

ERM: Well, sir, I have enjoyed this discussion very very much, and I hope it has been as rewarding to you.

VLH: It has. I have enjoyed it, and I must say that it has been pleasant to go back over some of the things that I have done in the past and try to reconstruct my thoughts that I had at that time and relate them to how I look at the same thing at the present time. Also, I can say that I have a new appreciation of the potentiality of oral history, not that I am making a great contribution, but I can see that this has tremendous usefulness by getting people who have had experiences, who have been thoughtful, who had responsibility for leadership as we had whenever we accepted a job in leading these big organizations. By getting such persons involved in a program of oral history like this you will build a record that is bound to have meaning for organizations, not only in history, but as examples of what to do and what not to do, guides to how to avoid problems.

APPENDICES

EYE TO THE SKY, FOOT TO EARTH

A Foreword

WHETHER it is a garden, a farm, or a forest, any piece of land yielding crops may also yield repose and joy. So it is with the millions of acres of our national forests. The pleasures these forests may give the people is the theme of this book.

For the first white settlers of America the woods lay just beyond the fields or out the door. So it was with woods and other natural wild country all the way to the Pacific. Solitude in a land of marvelous beauty, with clean and shining rivers and an abundance of wildlife, was our natural pioneer heritage as we moved west.

Wherever modern men go civilization follows and crowds them. Often men are driven into unnatural pursuits and actions not good for the land. This account that 30 foresters have written takes you all over our country and shows you the natural wealth and beauty which still is ours. But it also shows many places where men in ignorance, haste, and covetousness have wronged and hurt their country. We see now that there is a new conquest to be undertaken, a new kind of pioneering to be done, a healing reconstruction from the ground up. It would be no true Forest Service publication if it did not sound this call. The men of this Service have been preaching and practicing conservation for more than a third of a century.

I sometimes think we need more than ever, now, to refresh our spirits and renew our aims in the solitude of beautiful natural places. There is a natural completeness about outdoor occupations which we who have been forced indoors and penned in cities lack and miss. A man in a desk chair with his feet on a rug and his eye on a wall or ceiling all day long is a man

A FOREWORD

is some part cut off from real life and the eternal sources of renewal. There is something strangely restoring about work or play that is done with an eye to the sky and with foot to earth.

We are many of us cut off now in our present way of life from a direct and continuous association with the soil and weather of a given country locality, but I think we are probably forming a stronger feeling for our country as a whole. We can travel now, fast and far, and we do travel. Overseas wars will probably impel us to travel in, and to discover, our own country even more. Millions of us already are finding simple refreshment on these great Federal properties, the national forests. I hope that millions of other forest guests will come. They may be sure of their welcome.

HENRY A. WALLACE, *Secretary of Agriculture.*

FOREST OUTINGS: BY THIRTY FORESTERS

EYE TO THE SKY, FOOT TO EARTH

A Foreword

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§ 528. Development and administration of renewable surface resources for multiple use and sustained yield of products and services; Congressional declaration of policy and purpose.

It is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes. The purposes of sections 528 to 531 of this title are declared to be supplemental to, but not in derogation of, the purposes for which the national forests were established as set forth in section 475 of this title. Nothing herein shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish on the national forests. Nothing herein shall be construed so as to affect the use or administration of the mineral resources of national forest lands or to affect the use or administration of Federal lands not within national forests. (Pub. L. 86-517, § 1, June 12, 1960, 74 Stat. 215.)

SHORT TITLE

Sections 528 to 531 of this title are popularly known as the Multiple-Use Sustained-Yield Act of 1960.

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in sections 529, 530, 531, of this title.

§ 529. Same; authorization; consideration to relative values of resources; areas of wilderness.

The Secretary of Agriculture is authorized and directed to develop and administer the renewable surface resources of the national forests for multiple use and sustained yield of the several products and services obtained therefrom. In the administration of the national forests due consideration shall be given to the relative values of the various resources in particular areas. The establishment and maintenance of areas of wilderness are consistent with the purposes and provisions of sections 528 to 531 of this title. (Pub. L. 86-517, § 2, June 12, 1960, 74 Stat. 215.)

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in sections 528, 530, 531 of this title.

§ 530. Same; cooperation with State and local governmental agencies and others.

In the effectuation of sections 528 to 531 of this title the Secretary of Agriculture is authorized to cooperate with interested State and local governmental agencies and others in the development and management of the national forests. (Pub. L. 86-517, § 3, June 12, 1960, 74 Stat. 215.)

SECTION REFERRED TO IN OTHER SECTIONS

This section is referred to in sections 528, 529, 531 of this title.

§ 531. Same; definitions.

As used in sections 528 to 531 of this title the following terms shall have the following meanings:

(a) "Multiple use" means: The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

(b) "Sustained yield of the several products and services" means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land. (Pub. L. 86-517, § 4, June 12, 1960, 74 Stat. 215.)

LET'S RAISE OUR SIGHTS IN FOREST PRODUCTION ^{1/}

By
V. L. Harper
Assistant Chief, In Charge
Branch of Research
U. S. Forest Service

[Mr. Chairman, Ladies and Gentlemen:]

[May I first express to you my great appreciation for this opportunity to participate in your conference. The fine work being done by the FRIENDS OF THE LAND is a constant inspiration to all of us in the Forest Service. May your tribe increase, not only in numbers, but also in the influence which you have in shaping public thought on the vital subject of land and water management.]

I have been asked to talk about the future possibilities for forest production in the United States. May I preface what I am going to say by taking for granted that almost everyone realizes that "forest production" includes much more than the growing of timber for manufacture into lumber, paper, plywood, rayon, and the like. In addition to the production of wood--one of our most important and versatile raw materials--a forest can also provide in some places grazing for livestock, a good habitat for game, a pleasing setting for recreation, and a regulator for streams of clean usable water. All of these multiple products and services of the forest were basic considerations in the establishment of our National Forest System and all are given due recognition in the management of the national forests.

While multiple-purpose management of forests may apply more directly and specifically to forest land in public ownership, it is nevertheless

^{1/} Presented at FRIENDS OF THE LAND conference at Fort Wayne, Indiana on September 29, 1952.

true that forest land, regardless of ownership, can and should yield important benefits other than timber products. Most widespread and important of these other benefits is that of watershed protection. Therefore, management for timber production everywhere--on public land, on industrial holdings and on farm woodlands--can and should be made consistent with good watershed management.

But I am not going to say much about watershed management here--important as it is in any discussion of forestry. [I understand that another speaker will give his time to that subject.] What I am going to talk about is our timber resource and timber production in the United States. We do, without any doubt, need productive forests for the timber harvest that our forest lands can provide.

In discussing our timber situation I want to call your attention to some of the findings of a special commission set up last year to examine the long-term raw-materials position of the United States. That group, headed by William Paley, President of the Columbia Broadcasting Company, included a former editor of Fortune Magazine, a leading economist of Harvard University, and two other prominent men of industry. Known officially as The President's Materials Policy Commission, it was asked to look ahead twenty-five years and come up with some reasonable estimates of the amount of raw materials, including wood, that we shall need by that time. It was asked to appraise the supply outlook in the light of those estimated needs, and to consider not only our own position but also the position of the rest of the Free World. The report was published a few months ago under the title RESOURCES FOR FREEDOM.

The Commission draws some outlines of what we can expect to see by 1975. Assuming continuation of the trends that have prevailed over the past hundred years, we can expect that our 1975 population will be from 25 to 30 percent larger than at present. The gross output of all goods and services is likely to be about 100 percent higher than the amount produced in 1950. The total quantity of basic raw materials that would go into this increased production of goods is likely to be about 50 percent higher than in 1950.

Now, where would we get our basic raw materials? Not all from the United States despite the fact that this country is richly endowed with many natural resources. We have already become the world's leading importer of copper, lead, and zinc, and of timber products. We are beginning to import rather large amounts of petroleum and iron ore. In 1950 about 9 percent of the total raw materials consumed in the United States were shipped in from other countries. By 1975 the Commission estimates that we may be getting as much as 20 percent from abroad. I am not suggesting that we should be alarmed about such a trend. On the contrary, it is one of the indications of our position of leadership among the nations of the world. It does, however, add emphasis to the importance of taking good care of our natural resources, particularly our renewable resources.

The Commission's estimates of our raw material requirements in 1975 extend clear across the board. The indicated requirements for various classes of raw materials vary greatly from the over-all average of 50 percent above 1950. For the minerals and mineral fuels, the 1975 requirements are likely to be about 90 percent above 1950 consumption.

For the non-metallic minerals the increase is likely to be about 130 percent. And it is estimated that we will need about 40 percent more food and about 25 percent more of the non-food farm products.

With regard to timber products the Commission relied in part upon estimates prepared by the Forest Service. These turned out to be considerably lower than might be expected in comparison with other anticipated needs. They are only 11 percent above the 1950 consumption. Even this was somewhat higher than some previous requirements estimates made by the Forest Service.

I am citing these figures from the Commission's report because I think they indicate that we foresters have been rather conservative in our estimates of the amount of timber products that will be needed in the future. Timber being one of the more important "renewable" materials, there is even less reason to be stingy in our future use of it than is the case with "non-renewable" materials of the scarcer types.

Estimates of future needs are, of course, only the starting point for the formulation of resource-management policy and program. Certain specific goals should be set up. The Forest Service believes, in the light of our prospective long-term needs, that we should plan to grow, on a continuous-crop basis, about 18 billion cubic feet of timber. Eighteen billion cubic feet is a lot of wood--enough to make a solid block 100 feet wide, 34 feet thick and 1,000 miles long. Such a quantity would be enough, we believe, to meet our estimated requirements for timber products, to offset our unavoidable losses from fire and forest pests, and to give us a small security margin. It would still leave us dependent on Canada for the bulk of our newsprint paper.

There is a good case for raising our sights higher in order that we may, once more, be a net exporter of timber products to other parts of the Free World that are critically in need of lumber and of paper and paper products. But in terms of ability to meet the 18 billion cubic foot goal by 1975 our sights are already pretty high.

The job of meeting this 1975 goal would not be too difficult to accomplish if just any kind and size of trees would do. But, unfortunately, such is not the case. We cannot economically saw boards from little trees nor make pulp from saplings. For the bulk of our timber products we need fair-sized trees of reasonably good quality. We need what we foresters call "saw timber." The Forest Service believes that we should be planning to grow about 72 billion board feet of saw timber. This would account for the major part of the 18 billion cubic feet growth goal.

As a matter of fact this would account for at least two-thirds of the cubic foot goal. This means that about 12 billion cubic feet of annual growth of wood should be on trees of saw-timber sizes. Incidentally, for those of you who want to check the arithmetic you may assume that we can get 6 board feet of lumber from each cubic foot of growth of wood on trees of saw-log sizes. But I don't want to leave you confused by asking you to convert cubic feet to board feet and vice versa. What I do want to emphasize is that the growth of wood on the bigger trees is the more effective growth in terms of our over-all needs, and that it is customary to measure such growth in terms of board feet. Accordingly, I shall continue to speak only in terms of the 72 billion board foot growth goal.

Now comes the question, how can this goal be reached? There are a number of favorable factors. First, we have about 460 million acres of forest land that is capable of growing crops of commercially-usable timber. All of this acreage is now available for such use, although part of it is still inaccessible because of the lack of roads. The next 25 years will see some encroachment on the commercial forest area by agricultural and other uses, and on the other hand some cultivated land will revert to forest in accordance with good land use. But the net change will not be great enough to make any significant difference in our timber producing capacity. These 460 million acres of commercial forest land are potentially capable of growing a continuous crop of timber much larger than the above-mentioned goals call for. Accordingly, we have the forest land and the job is to put it to fuller use growing timber.

Secondly, there is pretty good evidence that prices of standing timber on the stump will not again fall to ruinously low levels. The rapidly dwindling supply of old-growth timber is forcing a transition from the economy of timber mining to an economy of timber-cropping. In this emerging situation the costs of growing timber will have to be paid. Timber is no longer a relatively free commodity to be had for the cutting. On the contrary, the price of timber, both now and prospectively, is likely to be a real incentive for the practice of forestry.

Finally, the interest in forest management has steadily been increasing over the years. This has meant further improvements in forest protection and in silvicultural treatments of stands that have heretofore been left to the mercies of nature. In this way forest land is

kept productive and the yields of usable wood increased. There is no reason for thinking that such interest in forest management will falter or fade away. Further educational programs, [such as those of FRIENDS OF THE LAND,] can do much to accelerate this trend. These factors, namely, that we have the forest land, that prices for timber are good, and that there is a growing interest on the part of the people to want better forestry, are the principal favorable factors.

On the other side, it must be admitted that we have an extremely tough job to accomplish, if we are to reach our goal by 1975 or as soon thereafter as possible. We are seriously behind schedule in getting our forest lands onto the timber-cropping basis. Approximately 90 percent of our commercial forest land has been cut over once--much of it has been cut over twice, and some of it three or more times. In this cutting there has been far too little attention paid to the possible succeeding crop of desirable timber and to the maintenance of an adequate growing stock. Vast areas of cut-over land are understocked, and worse still, the more desirable species have often been replaced by less desirable species. Something like 75 million acres--16 percent of our commercial forest land--would have to be planted in order to get it back into reasonable production within the near future. On the less deteriorated forest land a considerable amount of the growing space is occupied by poor quality to worthless timber, or by old and defective trees that were left standing on the first and second cutting operations. The cultural improvement of these young-growth stands is a real problem in many localities.

In order to reach the growth goal of 72 billion board feet per year on trees large enough to be classed as saw timber, we would need to have an over-all average of about 160 board feet per acre of growth in saw timber.

The current average annual growth in the northern part of the United States is about 50 board feet per acre. In the South and West it averages about 100 board feet per acre. Therefore, today's annual growth in saw-timber is way below the 160 board feet per acre needed to reach the 1975 goal. Our great problem is to build up more growth in larger trees, and in general to put our forest land in better growing condition. That, ladies and gentlemen, is the real challenge.

Next comes the question of the kind of program it would take for this country to put its forest land to greater productivity in order to meet the annual timber growth goal outlined above.

The Forest Service, as you know, has had a program to increase forest production which it has developed and advocated over the years. Substantial features of our program have been adopted by the Congress from time to time but much still remains to be done. Since many of you are familiar with the Forest Service program, I am not going to review it here. Instead I'd like to summarize the recommendations made by Mr. Paley's Commission. While some groups, both in industry and Government may not fully agree with all the Commission's recommendations, I do think they are important and deserve much more than passing attention. The Commission applied many months of study to the problem and it cannot be accused of having had an ax to grind--the Commission went out of existence when its report was completed!

Because 60 percent of all our commercial forest land is in farms and other small non-industrial holdings, the Commission lays special stress upon measures that will assist the small owner in the management of his forest land. It recommends that the present cooperative Federal-State program providing technical services to small forest owners and to operators of small timber-processing enterprises be expanded from its present field force of 230 service foresters to a field force of about 2,000. This, the Commission believes, would provide the necessary technical assistance to meet the needs of about half of the small forest owners and operators. Supplementary service could be expected from private organizations financed by industry, by consulting foresters, and by other agencies operated on a self-sustaining basis.

Another Commission recommendation calls for the extension of organized fire protection to some 66 million acres of private and other non-Federal forest land that still does not have such protection. As a means toward this end, the Commission urges that Federal aid to the States for fire protection be increased (on the present matching basis) up to the \$20,000,000 per year level authorized by recent Act of Congress. Federal aid for this purpose has been at about the \$10,000,000 per year level, with the States providing considerably more than half of the funds used for protection of private and other non-Federal lands. The Commission specially emphasized "the great, though immeasurable, losses caused by fire in destroying new growth and impairing watershed protection."

The Commission further recommends that the Federal Government increase (on a matching basis) its financial aid to states for the produc-

tion of forest planting stock. Present Federal aid for this purpose amounts to about \$100,000 per year. The authorized ceiling for such Federal aid is \$2,500,000. The Commission recommends that it be raised to that level as soon as practicable.

Pointing out that the existing credit facilities are not well adapted to the needs of small forest owners who wish to manage their properties on a sustained-yield basis, the Commission advocates the establishment of a national system of forest credit to be set up within the framework of the Farm Credit Administration. It suggests that borrowers be required to follow management plans approved by the lending agency, and that the agency develop a forest insurance service ancillary to its loaning functions.

Turning to the matter of taxation, the Commission recommends that the States, as rapidly as possible, substitute yield taxes for ad valorem taxes on timber, and that the present provision whereby the Federal Government taxes the proceeds from timber property on the capital-gains rather than the current-income basis be retained.

As its final recommendation with respect to privately-owned forests, the Commission says that universal adoption by the States of laws prohibiting destructive cutting would be in the national interest. It suggests that for the next five years the Federal Government lend whatever assistance it can to the States in setting up systems of compulsory regulation, including (on a matching basis) financial assistance for the administration of State laws regulating cutting. If after five years there still remain important gaps in the State system of regulation, the Commission believes that such gaps should be filled by Federal regulation.

With respect to the Federally-owned forests, the Commission believes that steps should be taken to bring their production up to a higher level. The 1951 cut from such forests amounted to about 4.7 billion board feet. This is only about half of the ultimate sustained-yield capacity of the national forests alone. The first step in putting the Federally-owned forests under more active management, especially in the West, involves the construction of access roads to tap fairly large areas that are still inaccessible. The Commission recommends the building of 6,000 miles of new roads to open up such areas. It believes that this job could be done in about five years at a cost of about \$30,000,000 per year and that the increased cut made possible thereby on a sustained basis would amount to some 2.5 billion board feet.

Along with the opening of inaccessible areas of Federal timber, the Commission recommends a strengthening of fire protection for the Federal forest lands, a speeding up of the authorized planting program, and more work for the improvement of timber stands on young-growth areas.

Pointing out that epidemics of forest insects and tree diseases now destroy far more timber on private and public forests than is lost to fire, the Commission urges that the Federal Government step up its efforts in this field, and develop stronger cooperation with the States and with private organizations. Effective control, according to the Commission, calls for more research, for better detection, and for vigorous suppression. The program thus far developed has not been on a scale big enough to bring effective control.

The Commission laid strong emphasis on the need for strengthening research in forest management and wood utilization. While the current forest research effort by Federal and non-Federal agencies is about three times that of 1940, it is still quite small in view of the great values at stake.

Much remains to be done before we know what we should know about regeneration, protection, and utilization of our young forests. In the East, especially, there is a large surplus of unused and unwanted hardwood. We should be searching for profitable ways to get such trees removed from our stands, and for forest management techniques that will prevent their further encroachment. We are spending large sums of money per year for fire protection but proportionally very little for research on better ways to control fires. We have only begun work in the important field of tree improvement such as through forest genetics. We know from results obtained so far that hybridization of certain species can give us faster growing trees and also strains that are resistant to certain diseases. We know that proper selection of seed source for planting programs is very important, but we have made far too little progress in research pertaining to seed source and in getting what we do know about it put into practice.

The national survey of forest resources, to provide us with the basic data on forest area, timber volumes, rates of growth, etc., has not yet been completed for about one-third of the country. Moreover, for some parts of the country initially surveyed resurveys are long overdue. The Commission says that the forest survey should be speeded up and kept reasonably current.

We have only begun the use of wood as a basic material for chemical utilization. Vast possibilities lie ahead in this field--particularly in the utilization of material that has up to now been left in the woods to rot and to be a fire hazard.

These problems and the great good that can come from increased effort at their solution, the Commission believes, justify a doubling of the forest research program all along the line--including that financed by the Federal Government.

While recommendations made by The President's Materials Policy Commission are not as complete as some would like to see, they would go a long way toward giving us the kind of forestry program that is needed with regard to timber production and utilization.

Another good reason why we need more timber production is for flood prevention and other phases of water management. You people will, of course, agree that the water problem must not be neglected. In many of the arid regions of the West, forest watershed values transcend timber values by a wide margin. Even in the East, the watershed values are of vital importance. More than half of all the water that falls on the land comes down upon our forests. Most of the forested land is on sloping or steep terrain. Disturbance of the forest cover and soil, by fire, or by logging, or by heavy grazing can have very serious effects on rate of runoff, rate of infiltration, and rate of soil-loss by erosion. We need to do far more than we have done in the rehabilitations of watersheds that have been impaired by misuse. We need to speed up research on soil-water relationships of forest lands, and speed up land management programs to the end that the various other forest-land uses can be harmonized with their use as watersheds.

Incidentally, I would like to invite FRIENDS OF THE LAND to hold one or more regional meetings at places where the Forest Service is carrying on watershed management activities--both research and action programs. I think a visit to some of our experimental forests and ranges would be especially interesting and instructive. Some of you are, no doubt, familiar with the results of the work done by other agencies on crop and pasture lands. You may not be as familiar with the work that the Forest Service is doing on forest and range lands.

The great tragedy is that a nation-wide program of watershed management on crop and pasture and on range and forest lands has never got going at anywhere near its needed pace. We go on building huge dams without providing the necessary treatments for the watersheds that lie above them. No one seriously contends that watershed treatment alone is the answer to the flood problem. It is, however, one of the important elements of flood prevention.

The main plea that I wish to leave with you is that we raise our sights in all of our thinking about the forestry enterprise. The American people who built our great transportation systems, our great industries, our great educational system, and our system of self-government are certainly capable of rebuilding our precious forest heritage. Let's give the job what it demands in imagination, foresight, hard work, and money.

UNITED STATES GOVERNMENT

Memorandum

Department of Agriculture
Forest Service
Washington 25, D. C.
1 copy to: Timber Mgt.;
Recreation & Land uses;
RMR, FMR, WMR

Distribution: (12-2-60)
3 - All Stations (FPL, AL, TR)
3 - All Regions
1 - Mr. Shanklin
1 - Mr. Hosley
1 - Mr. Griffith

To: Regional Foresters and Directors

File No. 4000

From: V. L. Harper, Assistant Chief

Date: November 30, 1960

Subject: Research

Attached are copies of a recent report of the Committee on Natural Areas of the Society of American Foresters, reprinted from the November 1960 issue of the Journal of Forestry. They are being sent as reminders of Forest Service interest in these scientific reservations, and to encourage the selection and establishment of others as needed. For a long time we had such vast expanses of untouched forest that setting aside examples of the virgin condition seemed quite unnecessary. Now, however, with the rapidly quickening tempo of management and utilization there is a corresponding need to take another look at the number of natural areas and their adequacy as to types and site represented.

Because their purpose is scientific, the Stations should take leadership in this review, but the Regions are expected to be interested and to support action to improve coverage.

The specifications for natural areas do not require that they be large, nor that they be easily and readily accessible. They need not, therefore, constitute much of a hindrance or interference with management.

We should like to see additional natural areas selected and established in the West particularly. In the East there is very little virgin forest left, either on national forests or elsewhere, and the Society is aggressively trying to save a few remnants as natural areas. It is finding this increasingly difficult to do. So where we still have opportunities readily available we should not put off action awaiting development of pressures and shortages.

The attached reprint lists only the natural areas accepted by the Committee of the Society of American Foresters. That accounts for the omission of several we have established in range areas. This calls attention to the small number of range natural areas. The

American Society of Range Management has not been as aggressive in this as the SAF, but this should not deter us from seeking out and reserving areas of range vegetation analogous to the SAF natural areas. The ASRM has from time to time collaborated with the Grassland Society in fostering the preservation of national grassland areas.

Attachment

[No attachment]

W. J. Harper

FOREST POLICY STATEMENT
FLORIDA SECTION
SOCIETY OF AMERICAN FORESTERS

Preamble

Foresters and the Florida Section of the Society of American Foresters as their professional organization have an obligation to promote the development and public acceptance of a wise-use conservation ethic and natural resources policy. Giving emphasis to this obligation is the fact that forests, within the territory of the Section and comprising in the case of Florida -- the major component of the Section -- over one-half of its land area, constitute a basic natural resource vitally important to the economic and spiritual well-being of the people.

Any acceptable statement of forest policy must be the product of the work of many members of the Society differing frequently in their views on individual issues, but united in a determination to advance beneficial forest practices and the profession of forestry. Forestry is the science, the art, and the practice of managing and using for human benefit the natural resources that occur on and in association with forest lands. These resources are not limited to trees, but include other plants, animals of all descriptions, the climate, the soil, and related air and water. The ability to manage these resources is dictated in large measure by the concepts and policies of the landowner, whether the people of a political unit, the shareholders of a corporation, or an individual.

The following policy statement outlines the Florida Section's position as a professional body on various aspects of forestry. In many respects it follows closely that of the Society's national policy. In other respects it supplements the national statement by including additional items. The Section's statement is deemed not in conflict in any respect with the Society's published national policy.

The Florida Section supports the Society's recognized obligation of bringing specialized training and technical skill to bear on the continuing evolution of enlightened forest concepts and policies. It shall be the policy of the Section to make its voice heard on current issues.

Conservation

Conservation is the wise use of natural resources, involving the management of forest and related range land for specific objectives. It is management for one or more purposes, including water, timber, forage, wildlife and recreation. Conservation provides for the continuation of some lands in the wilderness state for spiritual enjoyment, scientific study, and primitive recreation. It recognizes the need for perpetuating or restoring scenic beauty, clean air, and water quality.

The Florida Section of the Society recognizes the interrelation of air, water, soil, plants, and animals. It is keenly aware that ecology is basic to forest land management, and that man himself is a significant part of any ecological system. It believes that forest conservation must be based on an understanding and application of both ecological and socio-economic principles. These principles must be applied in all aspects of forest land management ranging from the intensive production of timber products to wilderness preservation.

Professional foresters, individually and collectively, should provide leadership in the development of programs and initiation of actions to meet the material and spiritual needs of mankind.

Public Relations

The Section has an obligation to inform the general public of its position on public issues concerning forestry and the profession.

Section and Chapters should encourage members to appear before public groups as representatives of the Society to further understanding of the forestry profession.

Forestry Research

Progress in the broad field of forestry is based upon knowledge gained through research. Strong programs are needed in both basic and applied research.

The Section strongly supports comprehensive, long-range planning of forestry research, coordination and cooperation between public and private organizations at all levels, and rapid dissemination and application of research knowledge.

The Section recommends sustained funding of qualified research organizations commensurate with the needs of forest owners, managers, and the public interest.

World Forestry

The Section is aware of our nation's opportunity and responsibility to cooperate with other nations of the world in the advancement of forestry and conservation of natural resources. The Section believes that the Society and its members should participate in the international exchange of personnel, knowledge, and ideas.

The Section endorses efforts to encourage professionalism in forestry among the nations of the world. To this end we support our national Society action to join with professional forestry societies of other nations in a program of promoting high standards of professionalism in forestry on a world basis.

Puerto Rico, Virgin Islands and the Panama Canal Zone are important units within the area of the Florida Section. Accordingly, the Section has a particular interest in the development of professional forestry throughout the Caribbean region of Latin America.

Use of Forest Lands

Optimal use should be made of forests and related lands. This may mean the use of an area for one or more limited purposes. Ordinarily, however, forest lands will contribute the most benefits to the economy and to society if administered under the multiple-use concept of land management.

In the absence of demonstrable need for single or limited use, skillful coordination of uses should be the goal of professional forest land management.

Professional foresters should participate in land-use planning and should make the specific recommendations on forest practices.

Ownership of Forest Lands

The Section encourages the exchange, acquisition, and disposal of lands where these processes will simplify administration and management and promote conservation through more efficient use of resources. Major shifts in forest land ownership, however, should be made only after careful study has determined that the social, economic, and managerial benefits therefrom exceed those attainable under existing ownership.

Forest Protection

Protection commensurate with the values protected is essential to the management of all forest land resources. The Section advocates coordinated, intensive efforts to reduce and prevent forest losses from fire, insects, diseases, animals, and other causes. Cooperation among all protection organizations and forest landowners will best achieve these objectives. Prevention is the ideal form of protection and is furthered through strong information and education programs. Public and private forest owners and the general public share the responsibility and the benefits of adequate forest protection.

The Section endorses programs of integrated protection involving judicious uses of ecological, biological, chemical, and mechanical control.

Forest Regeneration

Adequate supplies of the various goods and services available on forest lands are of vital importance to the state and national economy. Productivity of forest land used for the production of timber products should be maintained by use of harvesting and other methods that will provide favorable conditions for natural regeneration or would facilitate seeding and planting.

Appropriate continued action is needed to improve the productivity on non-stocked and poorly stocked areas of forest land. Seeding and planting should be done with due regard to suitability of seed origin and quality, planting stock, and soil type.

The Section endorses efforts to improve the genetic quality of forest trees for commercial use and of browse and forage plants for wildlife food and livestock grazing.

Timber Management

Sawlogs, pulpwood, naval stores, and some 500 derived products therefrom currently provide a value of more than a billion dollars generated by Florida's timber resource. Timber products are essential to our economy and standard of living.

Because of demands for other goods and services of forest land, the area available for timber production is not expected to increase. Thus, land devoted to wood production must produce more efficiently to meet the forecasted demands. The need for capable professional forest management is evident.

The Section urges private landowners and public administrators to employ professional foresters to plan and conduct stand improvement, timber harvest and regeneration practices. Silvicultural practices must become more intensive if timber yields and the economic returns therefrom are to be optimized. Maximum efficiency in harvesting, utilization, and marketing is essential to successful timber management.

Forest Inventories

Forest surveys form the basis for periodic appraisals of the forests of the United States. Inventory data on the quantity, quality, and condition of forest resources are necessary for the development of forest policies and programs by both public and private forest managers. Land surveys are fundamental to forest inventory and management. Surveys and economic assessments of soil, water, forage, wildlife, and recreation resources are needed, and should be made sufficiently often to keep data current.

The Section strongly supports professionally planned and conducted inventories of all forest resources financed in balance with their need and intended use.

Recreation Management

Recreation is one of the major uses of forest lands and related waters. The Section urges forest owners to identify and protect the recreational values of their lands. Where feasible, these values should be enhanced and made available to the public. Forest owners and managers should acquaint the public, as users of forest lands, with the costs and problems involved.

Most forms of forest recreation are compatible with other major uses of forest lands. Where this is the case, professional forest managers should coordinate recreation with other uses.

The problem posed by the fast-mounting pressures for recreational use of the forest is how to make lands available to many people without impairment of either the resource or the quality of the recreational experience. Technical and social skills should be employed by professional foresters in managing forest lands and deploying people to enhance and protect recreational opportunities.

The Section supports the establishment and use of forest parks, recreation areas, and natural areas for scenic, historical, scientific, and inspirational purposes where intensive study demonstrates that the long-term public interest requires permanent sacrifice of alternative uses and values.

Natural Beauty

Natural beauty is one of Florida's principal resources. The Section urges all public agencies, landowners, and citizens to develop and support policies and programs that will promote and protect the scenic and other aesthetic values of forest areas to the fullest extent compatible with major land uses.

Further, the Section recognizes the need for urban forestry and accordingly encourages the use of native or naturalized trees, shrubs and other vegetation to beautify right-of-ways, urban developments, parks, playgrounds, industrial and other areas.

Water Management

The Section recognizes the importance of forest land for water insoak and storage and as a source of water supply. Forest management influences the quantity, quality, and timing of water yield. It can have profound effect on sedimentation, pollution, fish habitat, and streamside values. The objectives of watershed management include production of water, maintenance of soil stability, and regulation of stream flow through coordinated management and use of forest land.

The Section believes that the management of the forest for water is usually compatible with management for other purposes but that protection of a water supply, under special conditions, may be of overriding significance. It recognizes the responsibilities of forest landowners to employ land-use practices which protect watersheds.

Soil Management

Soils constitute a natural resource which is vital to the production of timber, forage, water, wildlife, and recreation. Soil management consists of using forest lands to achieve their optimal productivity while protecting the soil from impairment. Acceptable means of soil improvement include water and biotic management, chemical and other additives, and mechanical treatment.

Wildlife Management

Wildlife and fish are important renewable forest resources and are products of their habitats. Timber, forage, and wildlife can be produced together when the resource manager and public cooperate to keep animal populations in balance with other land uses and food supplies. The Section endorses efforts to improve wildlife habitat by silvicultural and other measures, and it supports the principle of maintaining wildlife populations in balance with the carrying capacity of forest lands. It encourages the cooperative efforts of resource managers, sportsmen, and others to work toward purposeful wildlife habitat management.

Range Management

Forage is a major resource of some forest lands. The Section endorses grazing of domestic livestock on forest lands where it is economic, compatible with other major uses, and managed to maintain optimal forage levels. The use of forest range by livestock and game animals should be regulated so as to maintain a balance between forage production and use.

THE FUTURE ROLE OF SOCIETIES OF FORESTRY IN DEVELOPING COUNTRIES

SUMMARY

What is done with forests affects people; therefore, people organize to influence decisions related to forestry. Who are these people? How do they organize? What are their purposes? How do they pursue their goals? These are basic questions affecting forestry on a global scale.

Organizations of people interested in forestry can be grouped into three main classes: industrial, citizenry, and professional. Groups sponsored by industry or comprised of industrial members serve the business interests of members directly or indirectly. Organizations of citizens are most variable in composition and purpose, but in general they serve and represent the public interest in forestry. Professionals identified by their extended period of education and by their service-oriented work, form societies to maintain and improve services both to the profession and to the public. All three support forestry through a full spectrum of interests and activities.

The roles of the three classes of societies are complementary and, to some extent, overlapping. The traditional role of industrial groups is to exert economic and political pressure in order to influence public decisions affecting forestry resources and their utilization. Citizen's groups, at the other end of the spectrum, have traditionally molded and represented the public image of forestry. Recently, these two groups have assumed the tactics and roles of each other. Societies of professionals in the same way no longer are satisfied just with service to members and to the public; now they are entering the public arena to influence policies and programs. The stimulus for these shifts in roles has been the public's increasing concern over the quality of our environment, conservation of resources, and competition among users of forests.

The expanding role of the professional society reflects a new attitude toward social and economic responsibilities related to forestry. Professionals want and deserve to have a part in defining issues, in presenting available technology, in analyzing alternative courses of action, and in recommending policies and procedures. Organizations of professionals, moving in response to their membership, are becoming more active in assuming these varied roles.

Recent policy-oriented actions illustrate the varied roles of professional forestry societies. New societies are emerging to carry the professional banner in countries large and small, old and new. National conferences are helping to build the image of forestry and to attract the interest of the public. New educational programs are aimed at informing the public in order to create a more favorable attitude toward forestry. Societies are vigorously presenting their professional position on policies affecting forestry and on implementation of such policies. Coalitions are strengthening individual societies and leading to cooperation toward mutual goals related to forestry. Such actions are happening now, and they can be expected to happen with increasing frequency in the future.

The majority of developing nations lack organizations to influence public decisions related to forestry. Societies of professional foresters, plus forestry schools to educate professionals, generally are needed in these countries. Professional societies or general forestry associations could be created if other factors are favorable. Cooperation among all organizations concerned with forestry and related subjects can increase their influence on public decisions affecting forestry.

Three general conclusions emerge from this review of the role of societies of forestry. First, professional forestry schools and professional societies of foresters will have to be increased in numbers in developing countries before effective forestry can be practiced. Second, the quality and thrust of the profession's influence on the public and on decision makers must be strengthened. Third, we need to develop a fuller understanding of the four principal, interrelated, elements of the forestry profession -- education, research, the professional society, and practice.

(The Future Role of Societies of Forestry in Developing Countries by V. L. Harper and R. Z. Callaham, USA. General Paper, Seventh World Forestry Congress, Buenos Aires, Argentina, 1972.)

SELECTED BIBLIOGRAPHY FOR VERNE L. HARPER

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Harper, V.L. and Liefeld, T.A. "A New Day in the Naval Stores Industry." Journal of Forestry 36, no. 11 (November 1938): 1128-1130.

U.S. Department of Agriculture. Forest Service. Forest Outings by Thirty Foresters, Russell Lord, ed. Washington, D.C.: Government Printing Office, 1940. See Appendix A, pp.158-159.

V.L. Harper was one of the thirty foresters to work on this study.

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_____. The Management Status of Forest Lands in the United States, by V.L. Harper and James C. Rettie. Washington, D.C.: Government Printing Office, 1946.

Harper, V.L. "The Forest Research Program." In U.S. Congress. Senate. Committee on Appropriations. Agriculture Appropriations Bill. Hearings before a subcommittee of the committee on Appropriations, 81st Cong., 2d sess., 1951. Washington, D.C.: Government Printing Office, 1951. 469-502.

This report was written by V.L. Harper in 1949 as part of his study that eventually led to the McIntire-Stennis Act (1962).

_____. "Wood for the Future." The Land 11, no. 3 (January 1953): 270-275.

For a copy of this speech, published in The Land, see Appendix C, pp. 161-174.

_____. "Watershed Management." Unasylva 7, no. 3 (1953): 105-114.

U.S. Department of Agriculture. Forest Service. "A Report on Forest, Watershed, and Related Resource Conditions and Management, Forest Products Laboratory, 1954," by V. L. Harper and E.C. Crafts. General Integrating Inspection Report. Typed. National Archives, Record Group 95, Records of the Office of the Chief.

Harper, V.L. "Some Highlights of Forest Research." Journal of Forestry 53, no. 2 (February 1955): 106-111.

Harper sketches the history of U.S. Forest Service research and outlines contemporary research problems.

_____. "The Fifth World Forestry Congress--Should the United States be Host?" American Forests 62, no. 11 (November 1956): 6.

_____. "Fire and the New Age of Research--What can Forest Management Expect?" In Proceedings Society of American Foresters, meeting 15-17 October 1956, at Memphis, Tennessee. Washington, D.C.: Society of American Foresters, 1957.

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Harper contributed to the research portion of the program.

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Here is a general history of forestry research and anticipation of future research needs.

Santa Cruz, California. Forest History Society Archives. Society of American Foresters Files. V.L. Harper to Regional Foresters and Directors, 3 November 1960. See Appendix D , pp. 175-176.

Harper, V.L. "Outdoor Recreation Research in Federal Agencies." In Proceedings of the National Conference on Outdoor Recreation Research, meeting Ann Arbor, Michigan, 1963.

U.S. Department of Agriculture. Forest Service. A National Forestry Research Program. Miscellaneous Publication No. 965. Washington, D.C.: Government Printing Office, 1964.

Harper, V.L. "The New Forestry." Journal of Forestry 63, no. 10 (October 1965): 752-754.

U.S. Department of Agriculture. Forest Service. The American Outdoors: Management for Beauty and Use. Miscellaneous Publication No. 1000. Washington, D.C.: Government Printing Office, 1965.

Harper chaired the committee that prepared the report.

[Harper, V.L.] "Forest Policy Statement; Florida Section." Washington, D.C.: Society of American Foresters, 1968.

A copy of this study is in the Forest History Society Archives. See Appendix E, pp. 177-180.

U.S. Department of Interior. Bureau of Outdoor Recreation. A Program for Outdoor Recreation Research. Washington, D.C.: National Academy of Sciences, 1969.

Harper participated in the framing of this report.

Harper, V.L. and R.Z. Callaham. "The Future Role of Societies of Forestry in Developing Countries." To be published in Proceedings Seventh World Forestry Congress, Buenos Aires, Argentina, 1972.

A copy of this paper is in the Forest History Society Archives. For the Summary to this study see Appendix F, pp. 181-182.

SELECTED READINGS ON MULTIPLE USE

The following is a list of selected readings on the history of multiple use of the national forests. It was compiled by Barbara Holman, a graduate of Sacramento State College with a major in history, and Susan Schrepfer, who received her doctorate in history from the University of California, Riverside.

The listing was compiled in the course of the research preparatory to interviews made by the Forest History Society in cooperative agreement with the United States Forest Service on the subject of multiple use of the national forests. The interviewees selected for the project were Edward C. Crafts, Frederick W. Grover, Verne L. Harper, Earl S. Peirce, Hamilton K. Pyles, and J. Herbert Stone. This bibliography is not exhaustive. It is limited by time and the need to shape research according to the interviewee's backgrounds. It is hoped, however, that it might offer a brief introduction to any scholar brave enough to embark upon a study of multiple use.

UNPUBLISHED MATERIAL

GOVERNMENTAL AND NONGOVERNMENTAL

Unpublished material relevant to the history of multiple use was found in archival collections of the Forest History Society, Santa Cruz, California. These collections include the papers of the American Forestry Association, the National Lumber Manufacturers Association, and the Society of American Foresters.

Also consulted was Record Group 95 (U. S. Forest Service), in the Federal Records Center in San Francisco, California, and in the National Archives in Washington, D. C. Outstanding material found in these collections are listed below.

Bergoffen, Gene S. "The Multiple Use-Sustained Yield Law: A Case Study of Administrative Initiative in the Legislative Policy-Forming Process." M.S. thesis, Syracuse University, June 1962.

Pyles, Hamilton K. "Training Needs to Make Multiple Use Work." Speech delivered at meeting of regional foresters and station directors, U. S. Forest Service, 29 February to 4 March 1960.

Stone, J. Herbert. "Multiple Use--What is It? How is it Applied in Region 6?" Speech delivered at Symposium, Green River Community College, Auburn, Washington, 17 October 1960. A copy of this speech is to be placed in the Appendix of the typed transcript of the interview with J. Herbert Stone conducted by Elwood R. Maunder in October 1971, Forest History Society, Santa Cruz, California.

Twight, Ben W. "The Tenacity of Value Commitment: The Forest Service and the Olympic National Park." Ph. D. dissertation, University of Washington, 15 November 1971.

In this dissertation the author asserts that the U. S. Forest Service's primary commitment has been to the concept of timber as a crop to be harvested. As a result of this commitment, the service failed to respond adequately to the values and expectations of recreation-oriented groups with regard to the Olympic National Forest.

U. S. Department of Agriculture. Forest Service. "Recreation Uses on the National Forests: A Study of their Extent and Character With a Discussion of Public Policies and Recommendations as to Methods of Development and Administration, 1917," by Frank A. Waugh. Typed. Forest History Society Library, Santa Cruz, California.

Here is a very interesting early report with numerous photographs with identification.

_____. "A Report on Forest, Watershed, Range, and Related Resource Conditions and Management, Pacific Northwest Region, 1937," by Earl S. Peirce and Earl W. Loveridge. General Integrating Inspection Report. Typed. National Archives, Record Group 95, Records of the Office of the Chief.

_____. "A Report on Forest, Watershed, and Related Resource Conditions and Management, Northeastern Region, 1938," by Christopher M. Granger and Earl S. Peirce. General Integrating Inspection Report. Typed. National Archives, Record Group 95, Records of the Office of the Chief.

_____. "A Primer for Water Management on Cleveland National Forest," by Hamilton K. Pyles. May 1948. Typed. Copy in the Office of the Forest Supervisor, Cleveland National Forest, San Diego, California.

_____. "Plan for Management of the Southern California Forests," by Clare Hendee and Stephen N. Wyckoff. 1953. Typed. The original study is held in the Office of the Forest Supervisor, Cleveland National Forest, San Diego, California.

Hamilton Pyles participated in the formulating of this plan.

_____. "A Report on Forest, Watershed, and Related Resource Conditions and Management, Forest Products Laboratory, 1954," by Edward C. Crafts and Verne L. Harper. General Integrating Inspection Report. Typed. National Archives, Record Group 95, Records of the Office of the Chief.

_____. "A Report on Forest, Watershed, and Related Resource Conditions and Management, Pacific Northwest Region, 1958," by J. Herbert Stone. General Integrating Inspection Report. Typed. National Archives, Record Group 95, Records of the Office of the Chief.

_____. "A Report on Forest, Watershed, and Related Resource Conditions and Management, Eastern Region and Northwest Forest Experiment Station, 1958," by Verne L. Harper and Russell B. McKennan. General Integrating Inspection Report. Typed. National Archives, Record Group 95, Records of the Office of the Chief.

Hamilton Pyles was regional forester of the Eastern Region at the time this report was made.

_____. "A Report on Forest, Watershed, and Related Resource Conditions and Management, Northwest Region and Pacific Northwest Forest and Range Experiment Station, 1958, by Edward P. Cliff and Russell B. McKennen. General Integrating Inspection Report. Typed. National Archives, Record Group 95, Records of the Office of the Chief.

Attached to this report is a memorandum written by J. Herbert Stone.

_____. "A Servicewide Plan to Gear Multiple Use Management of the National Forests to the Nation's Mounting Needs." 1960. Typed. Archives Branch of the Federal Records Center, San Francisco, California, Record Group 95.

_____. "Forest Service-National Park Service Relationships." Office Memorandum by Richard E. McArdle, 12 February 1960, Washington, D. C. Typed. Archives Branch of the Federal Records Center, San Francisco, California, Record Group 95.

_____. "Guide for the preparation of a Ranger District Multiple-Use Management Plan. [1960]. Typed. Archives Branch of the Federal Records Center, San Francisco, California, Record Group 95.

_____. "Multiple Use Practices, Problems, and Opportunities in Southern Forests." By A. W. Greeley. At the Georgia Forests Research Council-Georgia Forestry Association Conference on Multiple Use of the Southern Forests, at Calloway Gardens, Pine Mountain, Georgia, 5 November 1969. Mimeographed.

U. S. Department of Interior. National Park Service. "Primary Use vs. Multiple Use," by Howard Stagner. At Visitor Services Conference, Williamsburg, Virginia, 30 November 1959. Typed. Archives Branch of the Federal Records Center, San Francisco, California, Record Group 95.

_____. Bureau of Outdoor Recreation. "News Release." Remarks by Edward C. Crafts before a Pennsylvania State University Forestry Convocation. University Park, Pennsylvania, 13 March 1963. A copy is to be placed in the Appendix of the typed transcript of the interview with Edward C. Crafts conducted by Susan R. Schrepfer in August 1971, Forest History Society, Santa Cruz, California.

Wilson, Carl N. "Decision Making and Multiple Use Management in the United States Forest Service." M.A. thesis, University of Montana, 1967.

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One Third of the Nation's Land: A Report to the President and to the Congress by the Public Land Law Review Commission. Washington, D. C.: Government Printing Office. 1970.

U. S. Congress. Senate. A National Plan for American Forestry. S. Doc. 12, 73rd Cong., 1st sess., 1933. Also known as the "Copeland Report."

U. S. Department of Agriculture. Forest Service. The Use Book. Washington, D. C.: Government Printing Office, 1907.

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V. L. Harper was one of the foresters who worked on this project.

_____. "Projects of Many Uses: Other Federal Forests," by F. W. Grover. In Trees: The Yearbook of Agriculture, 1949. Washington, D. C.: Government Printing Office, 1949.

_____. U. S. Forest Service Manual. Washington, D. C.: Government Printing Office, 1958.

_____. National Forest Program for the Shawnee Hills of Southern Illinois. Washington, D. C.: Government Printing Office. 1963.

F. W. Grover participated in this study.

_____. Cooperative Forest Fire Control: The History of its Origins and Development Under the Weeks and Clarke-McNary Acts. Compiled by Earl S. Peirce and revised by William J. Stahl. Washington, D. C.: Government Printing Office, 1964.

- _____. A National Forestry Research Program. Miscellaneous Publication No. 965. Washington, D. C.: Government Printing Office, May 1964.
- U. S. Department of Commerce. Study of Public Land Timber Policy, 4 vols. By George Banzhaf and Company. Washington, D. C.: Government Printing Office, 1969.
- U. S. Department of Interior. Bureau of Land Management. Man and the Forest: A Conference on Multiple Use Management of Forest Lands. Denver, Colorado, 17-19 April 1967. Denver, Colorado: U. S. Department of Interior, Bureau of Land Management, 1967.
- U. S., Statutes at Large, Vol. 74. "Multiple Use-Sustained Yield Act of 1960," 12 June 1960, p. 215. U. S. Code, Title 16, Sec. 528 (1970).

BOOKS - NONGOVERNMENTAL PUBLICATIONS

Forest Policy Statement: Florida Section. Washington, D.C.: Society of American Foresters, 1970.

V. L. Harper wrote this statement.

"Multiple-Use Forestry in the Changing West." Proceedings: Society of American Foresters Meeting. Salt Lake City, Utah, 1958.

Multiple Use of Forest Lands: Proceedings of the Fifth World Forestry Congress, Seattle, Washington, 1960. University of Washington, September 1962. Three volumes.

V. L. Harper was chairman of the Executive Committee.

Pyles, Hamilton K. "What's Ahead for Our Public Lands? A Summary Review of the Activities and Final Report of the Public Land Law Review Commission." Washington, D. C.: Natural Resources Council of America, 1970.

Reed, Waller. "Forest: Pressure for Multiple Use of Forest Land." In the Western Forestry and Conservation Association, Proceedings of the 46th Annual Western Forestry Conference. Portland, Oregon, 7-9 December 1955. 65-66.

Roberts, Paul H. Hoof Prints on the Forest Range: The Early Years of the National Forest Range Administration. San Antonio, Texas: The Naylor Company, 1963.

Smith, Frank E. ed. Conservation in the United States, A Documentary History: Land and Water 1900-1970. New York: Chelsea House Publishers, 1971.

Stone, J. Herbert. "A First Look at the Resources of the Northwest." In the Western Forestry and Conservation Association, Proceedings of the 42nd Annual Conference. Portland, Oregon, 1951.

PERIODICALS AND NEWSPAPERS

All issues of American Forests from 1920 to 1960 were carefully surveyed for articles, editorials, and news items bearing on the development of multiple use in the national forests. The Journal of Forestry and Living Wilderness were explored for these same years on an intermittent basis. The Sierra Club Bulletin from the early sixties provided provocative information. The most outstanding articles from these and other magazines are listed below.

Albright, Horace M. "Highest Use vs. Multiple Use." Sierra Club Bulletin 45, no. 4 (April-May 1960): 3-7.

Albright discusses the history of relations between the National Park Service and the U. S. Forest Service, focusing on the controversy over the extension of the Park Service into Forest Service lands.

Antrei, Albert. "A Western Phenomenon, The Origin and Development of Watershed Research: Manti, Utah, 1889." American West 8, no. 2 (March 1971): 42-59.

"A Program for American Forestry." American Forests 65, no. 7 (July 1959): 17-25.

Forest protection, improvement of the national timber crop, forest research, and multiple-use management of forest resources are explored in this article.

"Bulletin Board." Sierra Club Bulletin 45, no. 4 (April-May 1960): 15.

This is a short paragraph on passage of the multiple use bill.

Butler, Ovid. "Forest Situation Exposed: Exhaustive Report by Forest Service to Congress Lays Forest Troubles to Private Ownership of Land. Huge Program of Public Ownership is Proposed." American Forests 39, no. 5 (May 1933): 204-236.

This article discusses A National Plan for American Forestry otherwise known as the "Copeland Report." According to the article the report reveals "a critical breakdown of forest land management." There is only brief mention of recreation, range, wildlife, and watershed.

Callison, Charles H. "The 86th Congress and Conservation." Sierra Club Bulletin, no. 5 (June 1960): 8.

Chapman, H. H. "Recreation as a Federal Land Use." American Forests 31, no. 378 (June 1925): 349-380.

Author recognizes the importance of recreation to the national forests and discusses the question of how much forest land should be preserved from cutting.

Clawson, Marion. "A Public Land Review." American Forests. Part I 71, no. 3 (March 1965): 11-57. Part II 71, no. 4 (April 1965): 34-63. Part III 71, no. 5 (May 1965): 51-95. Part IV 71, no. 6 (June 1965): 20-59. Part V 71, no. 7 (July 1965): 26-63. Part VI 71, no. 8 (August 1965): 12-61.

This series of articles by economist Marion Clawson of Resources for the Future highlights some problems likely to be encountered by the Public Land Law Review Commission in its review of the public lands and administration and management in the United States. Clawson explores taxation of public lands, user payment, management problems, land exchanges, reorganization of federal resource agencies, and the future of public lands.

Cliff, Edward P. "Changes in the Status of Wildlife and Its Habit in the Northwest." The University of Washington Forest Club Quarterly 9, no. 3 (1935-36): 25-30.

_____. "The National Forests Serve." Journal of Forestry 53, no. 2 (February 1955): 112-115.

Cliff discusses briefly the development of The Use Book and of the various multiple uses.

_____. "The Role of Forest Recreation in Forest Land Management." Journal of Forestry 59, no. 7 (July 1961): 491-492.

Competition for forest lands intensifies, especially for wild lands. According to Cliff, the growing need for recreation offers a challenge to the profession of forestry. Foresters must be sensitive to social as well as economic values.

"Communities and Commodities." American Forests 69, no. 1 (January 1963): 11.

This article concerns the four-point program of the lumbering industry and multiple use.

"Conference Advances New Ideals in Forestry." American Forests 36, no. 6 (June 1930): 336-360.

This article reports the proceedings of a meeting of the American Forestry Association. The menace of stream and lake pollution was discussed as was the importance of forest recreation and wildlife. The association also put on record its opposition "to every bill in Congress for admission to the National Park system of areas which fail to meet completely the accepted National Park standards."

"Congratulations, Mr. Benson." American Forests 65, no. 4 (April 1959): 11.

Ezra Taft Benson proposes a program to provide more timber, water, recreation, wildlife, and other renewable natural resources. The writer of this editorial exclaims this is a "working model for balanced use on forest land."

Connaughton, Charles A. "Watershed Management--More than Mere Protection." Journal of Forestry 37, no. 4 (April 1939): 341-342.

This article discusses the importance of watershed management as restorative, protective and improvement.

_____. "Yield of Water as an Element in Multiple Use of Wild Land." Journal of Forestry 41, no. 9 (September 1943): 641-644.

_____. "The Triumphant Years." American Forests 61, no. 10 (October 1955): 20-95.

This is the story of Region 8, the Southern Region.

_____. "What is Multiple Use?" American Forests 65, no. 7 (July 1959): 30-61.

Connaughton clarifies the term multiple use.

_____. "The Forestry Profession and Land Use Pressures." Journal of Forestry 5, no. 3 (March 1960): 233.

This article discusses land management problems and the pressures brought on by the users of the various uses.

"Conservation in Congress." American Forests 47, no. 4 (April 1941): 182-200.

The recommendations of the Joint Congressional Committee on

forestry included: "More intensified management of timber, forage, wildlife, recreation and watershed resources on national forests." However, timber management and protection were the prime considerations of the committee with little consideration of the multiple uses.

"Crafts Discusses Multiple Use Bill." Sierra Club Bulletin 45, no. 5 (June 1960): 3.

Edward Crafts discusses various questions on the multiple use bill put to him by the Board of Directors of the Sierra Club.

Crafts, Edward C. "Brinkmanship in Our Forests." American Forests 75, no. 8 (August 1969): 19-52.

This article is based on testimony by Crafts before Subcommittee on Forests of the House Committee on Agriculture on a bill to establish a High Yield Timber Fund.

_____. "Saga of a Law." American Forests. Part I 76, no. 6 (June 1970): 13-54. Part II 76, no. 7 (July 1970): 29-35.

Craig, James B. "Bills, Bills, Bills." American Forests 66, no. 7 (July 1960): 22-96.

Edward C. Crafts helps Congress ride herd on all the bills affecting Forest Service programs.

_____. "Editorial." American Forests 72, no. 12 (December 1966): 12-13.

The American Forestry Association advocates that the North Cascades, in their entirety, remain national forest and therefore under multiple-use management.

_____. "Las Vegas--Where the Action Is." American Forests 74, no. 1 (January 1968): 16-63.

This article covers the 92nd annual meeting of the American Forestry Association and the association's discussions of the Bureau of Land Management's multiple-use practices.

_____. "North Cascades: A Different Kind of Country." American Forests 74, no. 7 (July 1968): 18-35.

This article centers on a move by some conservationists to turn the

Pacific Northwest's North Cascades into a national park, thereby removing it from forest service control. Craig discusses charges that the Forest Service permitted mining and logging in this wilderness area.

Dana, Samuel Trask. "The Early Years, Forest Service." Forest History 10, no. 2 (July 1966): 2-14.

This article contains excerpts from oral history interviews with Mr. Dana by Elwood R. Maunder and Amelia R. Fry.

Dresser, William T. "Design for Multiple Use." American Forests 70, no. 7 (July 1964): 13-15.

Dresser discusses the Los Angeles forests and the population that depends upon them.

Fischer, Virgil L. "Conservation: What Definition Do You Use?" American Forests 66, no. 6 (June 1960): 6-42.

"Five Leading Presidential Candidates Express Support for Multiple Use of Forests." Gulf Coast Lumberman 60, no. 12 (March 1972): 20.

The five candidates included Senator Edmund S. Muskie, represented by Representative Peter Kyros; Senator Hubert H. Humphrey; Senator George McGovern; Representative Paul N. McCloskey; and Governor George Wallace.

"Forest Protection--Past and Future." American Forests 42, no. 10 (October 1936): 458.

This editorial relates how forest protection results in improved streamflow protection, opportunities for recreation, and other economic and social returns.

Glascok, H. R. "The View From Here: A Concept in Search of a Method." Journal of Forestry 70, no. 4 (April 1972): 194.

Goddard, Maurice K., and Widner, Ralph R. "The Job Ahead for AFA." American Forests 69, no. 12 (December 1963): 6-48.

This is a discussion of the Fifth American Forestry Congress in Washington, D. C., 28 October 1963.

Goldman, Don P. "But WHICH People?" American Forests. Part I 74, no. 3 (March 1968): 14-48. Part II 74, no. 4 (April 1968): 30-58.

In this two-part article multiple use is discussed in relation to the national parks.

Greeley, Arthur W. "Proving Grounds for Multiple Use." American Forests 63, no. 10 (October 1957): 24-83.

The use of the national forests in the Lakes States is the topic of this article.

_____, and Neff, L. P. "Forestry Decisions in the Light of Multiple Products (A Case Study)." Journal of Forestry 66, no. 10 (October 1968): 788-791.

The Boundary Waters Canoe Area in northern Minnesota is taken as an example of multiple-use forest management.

Hall, Albert G. "Conservation Organizations Are Carefully Studying a Multiple-Use Bill." American Forests 60, no. 12 (December 1954): 6.

This is a short report on progress of multiple-use legislation.

_____. "The First Major Land-Use Act of the 85th Congress." American Forests 64, no. 4 (April 1958): 12.

Public Law 85-337 enacted by the 85th Congress and signed by the president in February 1958 has provisions for multiple-use management of such lands that might be set aside for military purposes, to the extent that multiple use is consistent with the military purpose for which the land is withdrawn.

_____. "Multiple Use: A Concept of National Forest Management." American Forests 66, no. 2 (February 1960): 10.

This article notes that: "It is expected that the recreational 'threat' to the national forests will result in consideration this year of a bill to give Congressional blessing to the multiple-use concept."

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_____. "The Multiple-Use Bill." American Forests 66, no. 5 (May 1960): 7-8.

Hall relates how the "equal status concept" of multiple use received strong opposition, and that the wood industries opposed providing for all uses, including recreational, which they argue the Forest Service has been doing for a long time.

_____. "Passage of the Multiple Use Bill." American Forests 66, no. 7 (July 1960): 9-10.

This article discusses the June 1960 passage of the multiple use bill.

Harper, V. L. "What's Ahead for Watershed Management Research on Forest and Range Lands?" In Proceedings Society of American Foresters, meeting 15-17 October 1956, Memphis, Tennessee. Washington, D. C.: Society of American Foresters, 1957.

_____. "The Fifth World Forestry Congress." American Forests 62, no. 11 (November 1956): 6-55.

This article discusses the purposes and history of the congresses.

_____. "Wood for the Future," The Land 11, no. 3 (January 1953): 270-275.

_____. "The New Forestry." Journal of Forestry 63, no. 10 (October 1965): 752-754.

Harper discusses the existing confusion over the proper role of forestry.

"Johnston Re-Elected AFA President." American Forests 66, no. 3 (March 1960): 26-61.

At a board meeting in February 1960 the American Forestry Association voted full support for the proposed multiple use-sustained yield bill.

Kelso, M. M. "Current Issues in Federal Land Management in the Western United States." Journal of Farm Economics (November 1947): 1295-1313.

Kneipp, L. F. "Forestry and Recreation." American Forests 30, no. 270 (October 1924): 585.

Here is an early example of the U. S. Forest Service's awareness of the great value of combined uses as a management principle for the national forests. Recreation and watershed are emphasized.

_____. "Public Forests in the National Land Plan." American Forests 40, no. 4 (April 1934): 147-188.

The above article discusses planned land use to provide social and economic stability.

Mann, Walter. "America's Other Face." American Forests 65, no. 2 (February 1959): 12-46.

Mann, chief of forestry division in Bonn, Germany, visited America and was impressed by the multiple-use practices. He expressed the desire of having such practices applied in Germany.

McCloskey, J. M. "Note and Comment: The Multiple Use-Sustained Yield Act of 1960." Oregon Law Review 41 (1961): 49-78.

This article was one of the most outstanding encountered on multiple use. McCloskey traces the legal and administrative aspects of the U. S. Forest Service's development of multiple use.

McConnell, Grant. "The Conservation Movement--Past and Present," in Ian Burton and Robert Kates, Readings in Resource Management. (Chicago: University of Chicago Press, 1960).

McFee, Roy E. "American Primeval Forest." Living Wilderness 24, no. 68 (Spring 1959): 35-37.

David Brower criticizes the Cascades Glacier Peak Wilderness Area proposal announced by J. Herbert Stone because it did not include vast acreages of actual wilderness beyond the Glacier Peak area.

"Meeting of Minds Sought on H. R. 10465." American Forests 66, no. 5 (May 1960): 6-62.

This article reveals the differences of opinion between the U. S. Forest Service and representatives of the lumber industry over the proposed multiple use-sustained yield bill.

"More Muscle for Multiple Use." American Forests 76, no. 8 (August 1970): 7.

Interior Secretary Hickel's proposal to reduce the allowable cut on Oregon's O & C forest lands is discussed here.

"Multiple Use Act is Passed." Living Wilderness 25, no. 73 (Summer 1960): 27-28.

This short article discusses wilderness as one of the uses named in the act.

"Multiple Use Analyzed." Living Wilderness 25, no. 72 (Spring 1960): 40-44.

Grant McConnell analyzes the bill and the ability of the U. S. Forest Service administration to deal with problems of conflict of land use.

"Multiple Use Bill Advanced." Living Wilderness 25, no. 72 (Spring 1960): 40-44.

This article discusses the multiple use bill proposal of April 20, 1960.

"Multiple Use Gets Confidence Vote." American Forests 66, no. 4 (April 1960): 31-67.

Hearings before the Subcommittee on Forests of the House Committee on Agriculture brought nearly unanimous support from congressmen and representatives of conservation and trade associations. McArdle argues on behalf of multiple use.

"Multiple Use is Here to Stay." American Forests 66, no. 6 (June 1960): 9.

This is a short essay together with a full-page cartoon concerning the American Forestry Association's support of multiple-use management.

"Multiple Use of Forest Lands." American Forests 59, no. 12 (December 1953): 14-40.

At the Fourth American Forestry Congress a session was dedicated to the discussion of multiple use.

"Multiple-Use Plans Replace 'Limited Areas'." Living Wilderness 25, no. 74 (Autumn-Winter 1960-61): 40-41.

J. Herbert Stone announces that limited area status of certain California and Oregon national forests has been replaced by multiple-use planning.

"National Forests Use: Privilege or Right?" American Forests 65, no. 5 (May 1959): 11.

This editorial discusses the challenges to the multiple-use proposal of the wilderness bill. American Forestry Association spokesmen declare that wilderness areas are not multiple-use areas.

"National Land, Water Policy Urged." American Forests 56, no. 12 (December 1950): 25.

The Natural Resources Council of America adopts a platform on resource management.

Navon, Daniel I. "Activity Analysis in Wildland Management." Annals of Regional Science 3, Part 2 (December 1969): 75-84.

"Olallie Ridge Multiple Use Plan Approved." Living Wilderness no. 77 (Summer-Fall 1961): 34-35.

This plan was approved by J. Herbert Stone in August 1960. It states in part that timber occupies a major portion of this land area and that the plan can be carried on with due consideration of the other uses.

Pomeroy, Kenneth B. "Forester's Notebook." American Forests 62, no. 3 (March 1957): 30.

H. R. 3831, "Public Use of National Forests," declares it to be the

policy of Congress that all resources of the national forests shall be so managed as to assure maximum public multiple use thereof and that recreation, hunting, fishing, and wildlife habitat enjoyment are proper uses of such lands.

_____. "Accent on Research." American Forests 69, no. 1 (January 1963): 31-51.

This article discusses the November, 1962, meeting of the Advisory Committee of the Department of Agriculture wherein multiple use was strongly supported.

_____, and Howard Zahniser. "Exclusive Use or Multiple Use?" American Forests 63, no. 4 (April 1957): 6-7.

This article presents comments by Pomery and Zahniser on wilderness at a Society of American Foresters meeting.

Pratt, George D. "A New Program for New Forests." American Forests 30, no. 372 (December 1924): 707-709.

Here is an example of early awareness of the importance of recreation and watershed on the national forests. It discusses reasons for the establishment of national forests near centers of population in the East, South, and Midwest.

Redington, P. G. "Fifty Years of Forestry." American Forests 32, no. 396 (December 1926): 719-750.

Redington outlines the history of the national forests. He explains that the two main principals that governed the U. S. Forest Service's administration are the use of forest resources in a way to insure their perpetuity and the administration of the forests for the greatest good for the greatest number. There was to be no monopoly of resources and no destructive exploitation.

Rosecrans, W. S. "Logging in Recreational Forests." American Forests 63, no. 5 (May 1957): 20-59.

Rosecrans focuses on the forests of southern California, an area where watershed control, recreation, and logging are combined.

San Francisco Chronicle. "Critics Wonder if Smokey's Still Guarding the Forest." May 9, 1971.

The topic here is the clear cutting by commercial loggers on national

forest lands in the Bitterroot Valley of Montana. The article claims that the Bitterroot "is not an isolated case of abuse" but rather an example of the fact that "the Forest Service in recent years has fallen into the clutches of the timber lobby."

Shaw, Charles L. "Foresters Soften Multiple-Use Position." Forest Industries 98, no. 13 (December 1971): 25.

Speeches at the annual meeting of the Canadian Institute of Forestry stressed the problems that equal value of the multiple uses has on the lumber industry.

Shoenfeld, Clay. "Let's Cut Out the Numbers Game Nonsense." American Forests 74, no. 5 (May 1968): 10-56.

If foresters are truly to practice multiple-use forestry they must recognize all the parts and uses of woodlands and manage them in a rational program that brings out the fullest economic, ecological, and esthetic values without destroying the resource.

"Society Meets at Salt Lake." American Forests 64, no. 11 (November 1958): 8-34.

At the Society of American Foresters's annual meeting there are comments on the importance of multiple use.

Stagner, Howard. "A Second Look at Multiple Use." American Forests 66, no. 2 (February 1960): 24-25.

This is an address originally given by Stagner before the National Park Service's biennial visitor services meeting in Williamsburg, Virginia.

Stone, J. Herbert. "Multiple Use and the Forester." Journal of Forestry no. 56 (September 1958): 699-701.

Application of the multiple-use concept as discussed by Stone is to provide the greatest good to the greatest number.

_____. "Herb Stone's Baedeker." American Forests 74, no. 6 (June 1968): 18-40.

Here Stone surveys the multiple uses of the Oregon Cascades.

_____. "Forest or Park: A Former Regional Forester's View." Journal of Forestry 66 (July 1968): 527-532.

Stone makes recommendations for the future of the North Cascades.

"The Big 'Multiple Use' Threats to the North Cascades." Sierra Club Bulletin 45, no. 3 (March 1960): back cover.

Timber, mining, and water are mentioned in this short article.

"The Higgins Lake Proposals." American Forests 52, no. 11 (November 1946): 520-543.

This article contains a proposal by national leaders in conservation, government, and industry. In the proposal is a section on management for multiple use.

"The Land that Nobody Wanted." Living Wilderness 31, no. 98 (Autumn 1967): 27-30.

"The U. S. National Forests, the Greatest Good for the Greatest Number in the Long Run." Time 74, no. 3 (July 20, 1959): 17.

"The Wilderness Bill: Nobody Wants It but the People." Sierra Club Bulletin 45, no. 3 (March 1960): 2.

Grant McConnell states that the proposed multiple-use bill does not define the multiple-use concept but leaves it to be played by ear.

Totman, Colonel Clayton O. "The Navy and Conservation." American Forests 64, no. 9 (September 1958): 16-55.

Colonel Totman declares that "In the future, where practicable, the soil, water, forests, grasslands, fish and wildlife existing on our installations shall be subject to multiple-use management."

Ullman, Al. "Multiple Use and the Proposed Wilderness Preservation System." Living Wilderness 24, no. 71 (Winter 1959-60): 30-33.

Some people believe that wilderness is becoming unduly subordinated to other uses of federal lands. An analysis of the wilderness system is presented here by Mr. Ullman.

"Urban Growth and Natural Resources." American Forests 64, no. 6 (June 1958): 24-45.

This article covers the growth of our population, effects on natural resources, and what must be done.

van Dresser, Cleveland. "Multiple Use Wildlife Refuge." American Forests 65, no. 3 (March 1959): 20-48.

van Dresser explores the merits of St. Marks National Wildlife Refuge in Florida as an area that provides recreational pastime for visitors.

von Ciriacy-Wantrup, S. "Multiple and Optimum Use of Wildlife Under Different Economic Conditions." Journal of Forestry 36, no. 7 (July 1938): 665.

"What's Ahead?" American Forests 77, no. 3 (March 1971): 42-43.

"Wilderness and Multiple Use." Living Wilderness 24, no. 70 (Autumn 1959): 26-27.

Here Ernest Swift's editorial in Conservation News for September 1, 1959 is discussed. He argues on behalf of the wilderness bill.

"Wilderness Bill Probed." American Forests 62, no. 8 (August 1956): 8-56.

The American Forestry Association discusses its opposition to a National Wilderness Preservation System as it would be inconsistent with multiple use. The association concludes by making their own proposal for a wilderness bill that would provide for multiple-use practices.

"Wilderness Needs a Multiple-Use Hearing." Sierra Club Bulletin 45, no. 5 (June 1960): 2.

This article discusses the lack of wilderness muscle in the multiple-use bill.

"Wirth Strikes Back." Ye Dailye Ranger. (1 December 1959).

This news bulletin from Colonial National Historical Park in Williamsburg, Virginia, expounds on the National Park Service - U. S. Forest Service feud.

"Your National Forests." American Forests 28, no. 341 (May 1922): 276-277.

Here is an editorial describing the fact that the national forests are dedicated to the continuous supply of timber, the protection of the nation's water supply, and recreation.

Zahniser, Howard. "A Basic Concept." Living Wilderness 25, no. 72 (Spring 1960): inside front cover.

The concept of wilderness is discussed here.

Zivnuska, John A. "People, Progress, and Preservation." American Forests 74, no. 9 (September 1968): 36-52.

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