J. Herbert Stone

A REGIONAL FORESTER'S VIEW OF MULTIPLE USE

An Interview Conducted by

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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 that 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
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INTRODUCTION

One of the purposes of oral history is to provide the scholar with a wider personal observation of important historical change and of those events and the main participants that contributed to change. In this interview and in five other interviews with former leaders of the United States Forest Service, our endeavor has been to trace the development of the multiple-use concept as it took shape in the minds and the words of a highly dedicated corps of professional foresters and how it gradually moved through processes of more refined articulation into practical application on the 182,938,520 acres of American forest land for which the United States Forest Service in the Department of Agriculture is now responsible.

This particular interview with J. Herbert Stone, retired former regional forester of the Pacific Northwest Region, was made on October 12, 1971, in Seattle, Washington, and October 30, 1971, in Portland, Oregon. The interview was conducted by Elwood R. Maunder, executive director of the Forest History Society, and was transcribed and processed into final form by the oral history staff of the society under the direction of Oral History Section head, Dr. Susan Schrepfer. Mrs. Barbara Holman and Miss Claudia Mehl performed the long and exacting tasks of transcribing, final typing, and xeroxing.

Mr. Stone and the interviewer have been acquainted for more than a decade so there were none of the usual difficulties of establishing a rapport between respondent and interviewer. Five years after retirement from a forty-year career in the Forest Service, Herb Stone is a still very vigorous and active participant in forestry affairs and in conservation associations. He is a regular at many meetings concerned with forestry conservation and the environment. He maintains active membership in the Society of American Foresters, American Forestry Association, American Society of Range Management, Soil Conservation Society, Yale Alumni Association, Forest History Society, Oregon Historical Society, Portland City Club, Izaak Walton League, Oregon Wildlife Federation, United Church of Christ, Western Forestry Center, Oregon Roadside Council, Coast Guard Auxiliary, and United States Power Squadron.

This interview traces briefly in its opening pages the respondent's early years. Growing up in New Haven, Connecticut, in the 1970s would not likely inspire a career in forestry, but being born and raised there in

the first two decades of this century was quite another thing. After completing the requirements for a master's degree in forestry at Yale University in 1927, Stone went to work on the Allegheny National Forest in Pennsylvania as a ranger. During the years of the Great Depression he moved steadily up through the ranks to junior forester on the Nantahala National Forest in North Carolina (1930 to 1933), to assistant forest supervisor on the Cherokee National Forest in Tennessee (1933 to 1934), to forest supervisor on the Nantahala (1934 to 1935) and of the Pisgah National Forest in North Carolina (1935 to 1936).

In these early years Stone recalls much of the early concerns for recreation felt by rank and file members of the Forest Service and of how these needs of the people were met, in some small part at least, by the men on the forests. There are clear lines of evidence here that, while most foresters had been trained most specifically to be timber managers, their youthful idealism merged with middle class American concepts of land use to strongly influence their performance of new found professional skills.

Herb Stone is known and probably will be remembered as primarily a timber management man. It was into this area of specialization that the mainstream of history seemed to shoulder the Forest Service during the post-depression recovery and the long agony of World War II. Stone was swept along by this current being named in 1937 timber management assistant in the North Central Region 9. Two years later he was put in charge of Private Forestry for the region and during the war years was in charge of the Private Forestry and Timber Production War Project, also for Region 9.

Following the end of the war Stone held a brief one-year appointment as director of the Central States Forest Experiment Station and was then made southern regional forester from 1946 to 1951. From 1951 to 1967 he concluded his career with a near-record, sixteen-year stretch of service as Pacific Northwest regional forester in Portland, Oregon.

The historian will find more than casual significance in the news release issued by the Forest Service Regional Headquarters in Portland on April 17, 1951. A copy of the release is attached to the interview as a part of the Appendices.* I quote here from the release only in part to show the emphasis that the Forest Service and its chief forester,

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*U.S., Department of Agriculture, Forest Service, Forest News, 17 April 1951, Portland, Oregon. For a copy of this news release, see Appendix A, pp. 180-181.

Lyle F. Watts, gave to increasing log and lumber production at this particular time:

> In announcing the appointment, Mr. Watts stated that Stone is eminently qualified to serve in the big timber country of Washington and Oregon. National forests of the Southern Region, administered by Stone since April 15, 1946, rank second only to the Pacific Northwest Region as a producer of timber stumpage. . . . This extensive experience in timber management will be of tremendous value to Stone in his new assignment, Watts said. The Pacific Northwest Region contains 39 percent of all the timber of sawlog size in the United States. Timber sold from national forests of this region in 1950 brought receipts of $19,733,396, or nearly half the total national forest timber receipts of $40,527,935.

Today's ardent crusader for environment may seize upon such evidence as proof positive that the Forest Service was until recent years obsessed with showing the Congress and the taxpaying public a good record of dollar return on investments in national forests. That this philosophy in fact did have heavy impact upon the thinking and activity of the Forest Service leadership during the thirties and forties is readily admitted by more than a few veterans of the Forest Service who were active in those years. But they point out with equal candor, and no little tinge of resentment, their contempt for noisy Johnny-come-latelies to ecology and environmental concerns to which foresters have been addressing themselves for a long time. Herbert Stone is one such defender of his profession and of the federal agency in which he served for forty years.

The historian will determine for himself where the truth lies, and he will doubtless compare the contents of these highly-structured tape-recorded interviews with a vast array of both primary and secondary sources that are available for study in active files of the Forest Service and in older files now in the charge of the National Archives. It must be said to the credit of the Forest Service that it has opened its files to examination by independent scholars with more confidence than have its critics in other areas of the federal establishment or in the private sector's melange of preservationist organizations. In demonstrating this faith in independent research and writing of its history, the Forest Service once again shows a capacity to lead rather than follow.

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 J. Herbert Stone.

Elwood R. Maunder

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.

CHILDHOOD AND EDUCATION

Family and Childhood

Elwood R. Maunder: I think we should begin with your childhood.

J. Herbert Stone: I was born in New Haven, Connecticut, in 1904. My father had a small business there known as the Eastern Machinery Company. They made elevators and brick machines, and I can remember in my youth visiting with my father some of the brickyards around the state and occasionally looking at some installation of an elevator which he was doing. I remember being impressed with one of the early push-button elevators being installed.

I do not know much about my father's family. His mother died when he was born, and he was raised by his grandparents--his mother's father and mother. He was born in Connecticut in a town called Middlebury, and I believe that his forebears had lived in New England for a long time.

My mother was born in England, and I believe the town was Stockport, but I am not too sure about that. She came over when she was only about six years old, in 1869, and I remember her saying it took about a month to make the trip. Her father settled somewhere around Montclair, New Jersey, when they first arrived. My mother finally studied nursing and graduated from a nursing school at the New Haven Hospital, now part of Yale University, in 1888.

Our family moved from New Haven to an adjoining village called Westville when I was about eight years old, and it was there that I grew up and went to school. We had a place large enough to have a large garden, chickens, and about eight acres of woods. I well remember the fine chestnut that grew on this woodlot. It provided some real good chestnuts for us kids to gather in the fall of the year. Unfortunately, it was early hit by the chestnut blight, and in 1914 my father had all of the chestnut cut. This provided firewood for us as long as we lived in that location.

The country in back of us was forested for miles. At least it seemed so to me at that time, and I think this is true. We used to

take many hikes up in this wooded area. There was a lake there, also, where we kids went swimming. I am not sure this turned me in the direction of studying forestry, but it certainly shaped my interest in the woods. One of my boyfriends in that stage of life was planning to study forestry, and he kept talking about it and letting me see magazines he got dealing with the subject. When I entered Yale, I was thinking of studying engineering or medicine, but in my sophomore year when we had to make a choice as to the specialty we were going to pursue, I concluded that there were more doctors in the world at that time than there were foresters and that this country needed to have some people trained in the field of forestry to help improve the condition and the management of the natural resources of the country. Therefore, I entered into a forestry career.

Forestry Education

ERM: You attended the Shieffield Scientific School of Yale University from 1922 to 1926 and the Yale School of Forestry from 1926 to 1927. Do you feel that the thrust of forestry education was on the right track in those years?

JHS: I think by and large it was on target for its time. If there is one thing that should have been emphasized a little more, it's the relationship between people. Forest land management isn't just a matter of silvicultural systems or even ecological relationships. All of these things are important, but so are the ways in which silviculture has an impact on people. Important, also, are the ways in which you have a chance to influence people. No individual is working in a vacuum. You may be supervising people. You may be working under somebody's direction. Whatever position you're in, you have to deal with human relationships. I felt that, there could have been more emphasis on that in forest school activities in those days.

On the other hand, I have to remember that the forest school at Yale was a graduate school. I did have quite a bit of English and history in my undergraduate work. In many respects, this served as background helpful to better understand people and work with people.

ERM: What professors impressed you most?

JHS: I had in my freshman year a professor of English named George Van Santvoord. He was quite a scholar and had considerable understanding of human nature. I remember one time he asked each of us to write a couplet about a thing of beauty. When we returned to class a few days later, we had to turn them in, and I remember taking mine to him and saying, "Now, I'm not sure that you think that this is a thing of beauty, but it seems to me it is." The couplet went like this: "Light brown and crispy, permeating the air with its delicious smell, a new-made loaf of homemade bread lies on the table by the window sill." He laughed and said, "This can be a thing of beauty, and it's important to understand the relationship of something like that to human beings." The books we read in that class contained much human experience and sparked stimulating discussion. I always thought it would have been helpful to me to have had a course in psychology, but I never was able to arrange this in my schedule.

ERM: Do you think that the training of most professionals in your field may have been lacking in exposure to the humanities and the social sciences?

JHS: Yes, I do.

ERM: Do you think that this has in any way contributed to the current dilemma of the profession in its confrontation now with new demands from society?

JHS: I think it has had some effect. I suppose that if we had been more sensitive to the reactions of others we would have been more concerned in our development of management plans and our application of them as to the effect that they might have on people who were purely recreationists. I don't think we were as sensitive as we should have been.

ERM: We enjoy the advantages of hindsight, as now in this instance, but I wonder if the profession and professional forestry education may not have been for too long a time riveted in upon the technological and the engineering aspects, the purely scientific aspects, of the field and only rather lately have come to a recognition of the human side of the equation.

JHS: I think that may have been true in the forties and fifties, but I don't think it was quite as true in the days when I was going to school. Our professors were teaching specific, technical subjects relating to the management of timber, but I know that they brought to our attention the impacts of harvesting on soil, water, wildlife, and

people. For example, Professor [Ralph C.] Bryant in his course on logging and lumbering discussed problems that might likely be encountered in working with company people and with lumberjacks and getting the right kind of management accomplished. Professor Bryant and others served as consultants to landowners. They were aware of the problem of trying to sell boards of directors of companies on a management program and workers on carrying out the program.

ERM: In other words, I take it that you feel the men of that particular era in forestry education were broad-gauged, alert to and involved in bigger things than just the narrow interests of their profession.

JHS: That was my general feeling. It may have been based upon a lack of broad enough contacts myself, but I thought they were. But as the techniques and technology of forestry have grown, I believe we've become too immersed in some of these technologies without having considered their impact on people.

ERM: Isn't this one of the by-products of the helter-skelter pursuit of a kind of a rigid, narrow professionalism?

JHS: Yes. I think that's right.

ERM: I think this may be really a by-product of that which has developed after the Bryants and the [James W.] Toumeys and the [George A.] Garratts and the [Henry S.] Graveses. I think there has been an intervening generation of educators who have been so locked in to the publish-or-perish concept of higher education that maybe they have become too highly skilled in one narrow area without enough exposure to these others. Now, I think there's a shift. I think there is a new awareness that is opening the gates to other disciplines.

JHS: There's certainly a change going on for the better. I think that this kind of tunnel vision is not related only to the professional forester; I think it's happened in medicine, engineering, in probably most of the other scientific pursuits. You take engineers. Engineers tend to explain all the problems in engineering terms; and economists do likewise.

ERM: I think it's just as true, Herb, of historians and people in some of the disciplines to which I'm more closely related. They are indeed highly skilled and highly trained in their field, but I think sometimes they become rather narrow in their view even of the subject that they are dealing with. Well, we mustn't talk too long on that.

DISTRICT RANGER, ALLEGHENY NATIONAL FOREST, EASTERN REGION, 1927 to 1930

Custodial Administration

ERM: After you came out of Yale, what was your first job?

JHS: My first job after I graduated was district ranger on the northern district of the Allegheny National Forest in northwest Pennsylvania, and I reported for duty there on the first of July, 1927. L. L. Bishop was the forest supervisor. Up until that time, there had been just one ranger district for the whole of the Allegheny. The Allegheny forest was a purchase forest. I think acquisition started about 1922, and by 1927 maybe three or four hundred thousand acres of land had been acquired and the decision had been made to establish two ranger districts. I became the district ranger on the northern half of the forest, and another fellow took over the southern half.

ERM: And you were in the Pennsylvania area of that forest?

JHS: That's right. For my district the northern boundary was the New York state line, and the southern boundary was the Warren and McKean county lines.

ERM: Tell me about the job that you were put to do.

JHS: My job was to handle the management, development, and protection of this northern half of the forest. Of course, in the 1920s we didn't have much in the way of timber sales. It was pretty largely a task of putting the land under management. I had, for example, to organize and handle the fire protection, which included recruiting and training people for fire crews and lookouts and fire guard.

ERM: Would you say that protection was the principal job?

JHS: Oh, no. It wasn't the principal job. It was an important part of the job, but then I had to mark many of the boundaries that weren't well marked. I marked the boundaries of my district, which helped me to get acquainted with it. I also issued permits for free use or small

commercial permits for fence posts and things like that to the people living around there. I had a couple of campgrounds that I had to maintain, and occasionally I had a small amount of money to develop them, but not very much at that time.

Recreation

ERM: This was rather early evidence of concern for recreational needs, wasn't it?

JHS: Oh, yes.

ERM: The years were 1927 to 1929?

JHS: Yes, 1927 to 1930. I can give one illustration of concern for other things. At that time, the Wheeler and Dusenbury Lumber Company was completing their cutting of some of the last stands of old-growth white pine, which originally covered northwest Pennsylvania. This company, under urgings from Supervisor [L. L.] Bishop, gave to the United States twenty acres of this old-growth forest to maintain and keep as an example of what covered northwest Pennsylvania originally. Then we were able to buy another one hundred acres around it. This wasn't very much, but it gave some protection to this twenty-acre patch of real old stuff. So I had to put this under protection. I built a fire line around it. We didn't have much money to do much else. But this development represented concern for providing not only a recreational place, but sort of a museum piece of what originally grew in northwest Pennsylvania.

ERM: Has that remained to this day?

JHS: You know, I left there in 1930, and I never got back until 1967, thirty-seven years later. I had an opportunity to go back there. I spent two days looking around my old district, and one of the places I visited was this old-growth pine, called Heart's Content. It had changed quite a bit. A good share of that old-growth pine had disappeared. It had been blown down, struck by lightening, trees killed by disease or old age, and they'd taken them out. Now it is mainly a hemlock forest. It was a pretty spot, a beautiful spot, and there were a few old-growth pines around, but not many.

ERM: But it had not been cut?

JHS: Oh, no. It was still being preserved as a recreational attraction.

ERM: Were there none of the old trees left?

JHS: I didn't have time to really cover the whole property. We were trying to see so much in a short time. But I didn't see many old pine where I was. The supervisor told me that there was just one or two left in various places. But I think it illustrates that here you're dealing with a living thing. Trees grow and they die just like people, and you can't preserve the status quo by putting a line around it. You're dealing with a living community, and your management must be based upon that fact. So it's still a recreational spot and an attractive one and serves that purpose, but it doesn't serve to illustrate what kind of a forest originally covered that country.

Timber Management

ERM: What would you say about the character of this purchase forest to which you were assigned? Was it almost entirely cutover land?

JHS: A good share of it was cutover, and some of it badly burned.

ERM: Abandoned for taxes?

JHS: No. It hadn't been abandoned for taxes. At least most of it I don't think had been. It was purchased from lumber companies and some small, private owners. Some timber was obtained in the course of this acquisition. I made the first sale of any size made on the Allegheny forest. On my district in about 1928 we had a unit of old-growth hardwood surrounded by lands owned by the Central Pennsylvania Lumber Company. They had a railroad in there and were cutting off their timber. Our unit needed some cutting. Anyway, it fell to my lot to plan this cutting. Since there hadn't been much harvesting of this sort, I decided to establish a number of plots to test different methods of harvest. One plot was clear cut; several were selectively cut. There were several degrees of selective cutting. One plot was cut leaving only a few trees for seed.

This sale layout was done about the time that the Allegheny Forest [Northeastern Forest and Range] Experiment Station was established in Philadelphia. Reginald Forbes was the first director. He came from New Orleans where he had been director. He and some of his staff came out on the district, and I took them out to these plots. We had quite a group of foresters and held there sort of a clinic. It was decided the plots ought to be crown-mapped for subsequent observation in a much more intensified and systematic way than I would be able to do. I agreed, but I said, "I just don't have time to do all these things." So the station decided that they would take it over. This cutting was to start in January. Forbes, Ashbel Hough, and I went out there one cold, January day to start the crown-mapping job. I must say crown-mapping in a foot of snow and ten-degree weather is a cold job.

ERM: Has the research on those plots persisted?

JHS: It persisted for quite a few years. I don't know about now. Unfortunately, I didn't get a chance to go to these plots when I was there. I very much wanted to, but it was raining that day, and we would have had to walk some distance. The supervisor wasn't quite sure how to get into them. I don't know whether he'd ever been there. I believe I could have found them, but it was, as I say, raining hard, and we didn't undertake to do it.

ERM: Do you know of any papers that have ever been written on these?

JHS: No, I don't. Ashbel Hough, now deceased, carried on research in this area for many, many years, and he would have known. It seems to me that he told me once that they had carried on measurements there for a long time. I think that Ash told me a real fine stand of cherry and ash had grown on the clear-cut plot.

ERM: Isn't it data of that kind, drawn from observations that span forty or more years, that would be most useful now?

JHS: It would be real helpful, and I would assume that the station must have something in their files.

ERM: This would be the station at Upper Darby?

JHS: Yes.

ERM: I may be there this winter, and I'll try to remember to check up on this because that would be most interesting.

JHS: These were plots on lot 586. I've never forgotten that number [laughter].

ERM: Lot 586 of the Allegheny, northern district.

JHS: Yes, in the northern district. They've got more than that now. They've got three districts, at least, now, maybe more. The plots were southwest of Sheffield. The Central Pennsylvania Lumber Company had a mill there in those days; they were hauling logs into that mill by railroad from up on Little Arnot Run, lot 586.

ERM: People in the Forest Service tend to be a very peripatetic bunch. It seems to be part of the policy of the agency to keep people moving. To what extent do you think that policy may tend to defeat the kind of thing that you did in the creation of the plots? Or do you think it has been possible for succeeding people to take over where a man leaves off? Or do lots of these things just get forgotten and the long-range benefits that might be derived lost?

JHS: The Forest Service, in this case, had a man at the Kane Experiment Station. Ashbel Hough spent his lifetime at that station. He was particularly responsible for the experimental station's work up in this area. This station covered a lot more than just the plots. But Ash was there almost from the start, and he certainly was familiar with the development of the forest following the cutting. Continuity was available through Hough. The Forest Service has a task--as any big, nationwide organization has--of developing men for various assignments. Moving men around is one way of giving them experience in various types of work and in various places. This experience helps to fit them to serve in administrative capacities at higher levels.

ERM: But in the research area, perhaps, they don't move quite as much.

JHS: No. I don't think they do move quite as much. I'm sure you'll find areas where research people have moved too frequently, and you'll find areas where administrative people have moved too frequently. I never wanted to leave the assignment I was in, really. In 1930 when I was transferred to the Nantahala, I thought that I was just beginning. I had been on the Allegheny only three years and thought I ought to stay there; I wanted to stay there. Then, on the other hand, I realized the opportunity that the move would afford. That's been the same with almost every move. So it's probably true that sometimes men are moved too much, but, on the other hand, there are also instances where they are left in a place too long.

Forest Appropriations

ERM: Is there anything at all that transpired during your assignment on the Allegheny with which you associate recognition of the multiple-use idea?

JHS: No. I don't think it was that early. I had some campgrounds on the district, and I had other areas that seemed to me to be attractive places that ought to be developed so people could use them. Of course, there wasn't the pressure for outdoor recreation at that time, and neither was there the money. I felt that the forest would be better off if we could get people acquainted with it. They would understand better what we were trying to do, and we'd have greater cooperation in protection.

ERM: How did you translate that notion to your superiors?

JHS: I guess it was through allotment requests. In those days we used to have an allotment conference every year in which each ranger would sit down with his supervisor and review his needs. I would present the program I wanted to conduct with an estimate of the money needed. But funds were hard to come by then, as they always have been, even in small amounts[laughter].

At one of these allotment conferences Evan Kelley, the regional forester, was present. My estimate of money needed was before him. It was really a modest asking. I remember one amount that I asked for was $8.00 to hire a team to replace a telephone pole on a line going to a lookout tower. When Major Kelley came to this item on my list, he gave me a lecture about how they used to do it when they just didn't get any money for that sort of thing. They would cut poles on the forest, haul them to the site with their horses, put them in holes they dug, and a line would be built. I got a little irritated about that time[laughter], and I said, "Well, Major, this line's going to work regardless of whether we get $8.00 or not, but, of course, we don't have any horses here. I've got a Model T Ford, and if I can get a pole close enough to the road, I might be able to skid it to the site. We'll see [laughter]." I got the $8.00.

ERM: But you had to get down to that kind of small item in these conferences over budgets for the coming year.

JHS: Yes, yes we did then.

ERM: It was that tight?

JHS: Every budget estimate was scrutinized in some detail. Of course, we didn't go into every item, but the regional forester would pick out an item or two. I think what he was trying to do was to give me a lecture on the principle of ingenuity and hard work.

ERM: How much was your district allocated per year in those years?

JHS: I can't remember that.

ERM: Can you give me a rough idea?

JHS: It varied, of course, from year to year depending on the program. At one time, I know, we had money to clear a right-of-way for a road, and that time, I suppose, we received ten or twelve thousand dollars maybe.

ERM: For your total operation or just that road?

JHS: No, the total operation.

ERM: In other words, you were running the northern district of the Allegheny on less than a thousand dollars a month, is that right?

JHS: Yes.

ERM: That included your pay and all the rest of the expenses.

JHS: I started at $1,800 a year, and I suppose at that time my salary was around $1,900.

ERM: In other words, you were paying your fire costs, too.

JHS: Well, this didn't include the fire-fighting costs.

ERM: It did not include that.

JHS: No. The fire-fighting costs were paid from any funds available. We were free to spend money to put out fires, and then Congress appropriated the money required in a deficiency appropriation.

ERM: For you to maintain your watch and control over that rather large area, you had to do it within a very small budget of less than a thousand dollars a month. Is that right?

JHS: That's right.

ERM: Where was the majority of that money being spent? For what purposes was it used?

JHS: I think probably the majority of it was being used for our fire-protection organization. We had a number of guards and lookouts on during the fire season. The fire season there was a couple of months in the spring and another couple of months in the fall. We also did planting and maintained a few campgrounds and structures.

ERM: And that was not covered under the blank-check arrangement?

JHS: No.

ERM: That had to be within your budget.

JHS: That was within my budget. I had money allotted for each fire guard and lookout.

ERM: How much did you have allotted, for example, for cruising and timber marking and making timber sales and things of that kind?

JHS: Well, I didn't have very much. In fact, on all sales, I did all the marking myself. I don't recall that I had any extra money for administering sales. I did all the marking and I scaled the timber; I scaled the logs right in the woods.

ERM: I think you can see what I'm getting at, Herb. The manifestation of policy is in how funds are spent. Then you can see from this to what extent there was any real concept or understanding of a developing multiple-use principle.

JHS: Yes, but not entirely. Part of the job of planning a timber harvest, then as now, involved consideration of soil or water impacts. These impacts were considered regardless of the nature of funds for personnel handling sales.

I had money available some years for planting, but it wasn't extensive. There was money also available for planting surveys. As a matter of fact, in those days we would work between districts. For example, I went down and I worked on a planting survey in the southern district for several weeks where they had an especially heavy planting job.

I also had a planting program on my own district. I was given about two hundred and fifty dollars to plant twenty-five acres--ten dollars an acre [laughter]. I got the trees in the ground all right. Incidentally, I saw some of them on a trip thirty-seven years later, and, boy, they looked good. I saw one plantation that was sixty feet tall. A commercial thinning was already being harvested. That was quite an inspiration.

Multiple Use and Forestry Education

ERM: Had your forestry education geared you for emphasis on any one use of the forests?

JHS: Well, I suppose that, as much as anything, my training dealt with the handling of land and timber management. Incidentally, the training in the art of silviculture, the practice of silviculture, took into consideration some of the interrelationships with other forest land resources. Management of timber involved first estimating the timber volume, knowing the kind and quality of timber, knowing how it was to come out, assessing impacts on other resources, planning road systems, and budgeting the harvest to sustain dependent communities. We also had some courses in soils. I don't think the soil courses were anywhere like they are today.

ERM: Did you have courses in wildlife and watershed management or in grazing or recreation?

JHS: No special courses in any of those, although in our silviculture courses we certainly discussed the relationship of the wildlife to the timber, its need for cover, and its need for food supplies. Much of this also came in outside reading that we were assigned. This involved reading library references from journals of one kind or another.

ERM: But it was always in a peripheral area?

JHS: Yes, that's right. It wasn't the main thrust of the course.

ERM: Courses in these special areas, of course, have come on in times since then.

JHS: Yes they have.

JUNIOR FORESTER TO FOREST SUPERVISOR, SOUTHERN REGION,
1930 to 1936

Multiple Use and the CCC

ERM: I'd like now to ask you to talk about your career, from 1930 to 1936, when you were forester in a number of national forests--the Nantahala, Cherokee, Pisgah--in Region 8. Could you cite any evidences of a growing consciousness of multiple use during that period of your career?

JHS: We were aware when I was on the Allegheny of the impact the deer were making on the young trees. We were aware when I was down in the southern Appalachians of the impact that the deer were making on trees, and this was in the late twenties, early thirties.

On the Pisgah area, we had a federal game preserve on which there was an attempt started to harvest deer on a planwise basis. We even trapped deer to ship to other areas for restocking and caught fawns and raised them for restocking purposes. This occurred in the late twenties and early thirties.

ERM: But the main consideration, as I gather from your statement, was, not the positive aspect of wildlife management, but how was the wildlife negatively affecting the growth and development of the trees. Isn't that right?

JHS: Not on the Pisgah Game Preserve. On the Pisgah preserve we were concerned with producing a crop of wildlife, and we even had a biologist there. We had a fish man there during the CCC program. When the CCC program started, that really gave us money and an opportunity to employ specialists in connection with fishery, wildlife, and recreational programs. We first got Fred Ruff, who conducted studies on the Pisgah preserve with regard to what the different animals ate, including wild turkeys. He would collect some of these turkeys and open their gizzard and find out what they were eating, and this, in turn, had an influence upon what our silviculture was in terms of releasing trees. We saved more of the hickory trees. We saved the hickory trees because the turkeys were eating hickory nuts.

Then we built a couple of fish hatcheries, and we had a man on the staff of the Pisgah who was a fish specialist. He'd taken some early training in this area, and he helped us in sampling streams to determine what the populations were, what the food supply was, what we could raise there. It was on the Pisgah in the CCC days when we made our first extensive population counts of deer by breaking the area up into units and driving those units and actually counting the deer that we drove out. We had a ring of CCC boys around the unit.

ERM: And this all came about under the New Deal impetus and the CCC.

JHS: That's right.

ERM: Were you then beginning to get more money so that a more sophisticated program could be put into effect?

JHS: We had money and we had men. They, incidentally, also built roads to open up areas so that we could, not only get into them to protect them from fire, but also get into areas that we wanted to develop for recreation, for camping. I remember during the CCC days on the Nantahala we built a little dam to make a swimming pool right by a campground, and we improved all of our campgrounds and built new ones. There was a tremendous lot done in those days. We had a recreational specialist on the forest at that time.

ERM: Do you feel that the first great impetus for recreational development came with the depression?

JHS: Yes, with the depression, but I would say more appropriately with the availability of resources through emergency programs. It gave us a chance to serve a pent-up need. When we had the manpower and the money available, there was a great deal done in the way of building campgrounds as well as of getting information to enable us to do a better job of managing wildlife and water. As a matter of fact, the Coweeta Experimental Forest on the Nantahala was started in the CCC days. The Civilian Conservation Corps built the buildings, roads, weirs, and other measuring devices there. It enabled the experiment station to build research facilities in which to undertake a comprehensive program of controlling the streams and measuring their fluctuations after measured rainfall.

ERM: How did all this fresh impetus of money and manpower contribute to the development of a multiple-use concept?

JHS: The start of the CCC marked the beginning of the opportunity to practice real multiple use. For example, I was on the Nantahala National Forest when the law was passed in 1933 and helped to establish the first camps there. These camps brought us money and manpower to really begin to develop all the forest land resources. I can detail these if this is what you're interested in.

ERM: Right. I would like you to emphasize which uses of those forests you feel might have been most heavily emphasized in that period.

JHS: First of all, we were able to develop roads. Roads were badly needed for protection and administration. They were needed to make scenic and recreational areas available to people. They were required for improving the forest by thinning, improvement cuttings, and commercial timber harvest. We had the manpower to do the thinning and improvement cutting. We were able to go into forest areas and determine which were the crop trees, to release those crop trees, and to release them in a way that provided more food for wildlife. On the Nantahala forest, thousands of acres were given this kind of treatment.

The CCC also provided the manpower to build a number of campgrounds that were planned. We knew these areas had recreational potential. I remember one on the Nantahala we called Wayah Glade. Wayah is a Cherokee Indian name meaning wolf and was the name applied to a mountain on the Nantahala range. The peak was called Wayah Bald. On the way up to Wayah Bald there was a beautiful grassy glade that people used some for picnics. The CCC program enabled the Forest Service to build some tables, toilets, a trail, a water system,and parking areas. We also were able, at this particular point, to build a dam that provided a swimming spot. This area was heavily used by local people after it was constructed. At that time there weren't so many tourists coming into the country as I believe there are today. I'm sure that this influx of tourists has greatly increased the use of areas like this.

Wildlife Management

ERM: What problems, if any, did you have in reconciling different uses?

JHS: One conflict of use that we encountered early was in our timber stand

improvement work. I can recall on the Nantahala we did some timber stand improvement work in an area near some Cherokee Indian lands. Some of the Indians saw this, and they were quite apprehensive about it because they said, "You're removing the hickory trees which provide nuts, an important food for squirrels. If you continue this treatment there won't be any squirrels left to hunt."

I made an analysis of this particular area and found by actual count that there would be a substantial number of hickory in the forest after treatment. We were eliminating only a small proportion of the hickory trees. Left were a large number of hickory seedlings, saplings, and bigger thrifty trees. These would provide plenty of nuts for the squirrels. In addition, there were many oak trees left in the forest which provided squirrel food. The facts were provided to the Indian Service, which had protested our action and we heard no further protest. This experience emphasized for us the importance of considering all the impacts of our treatment measures.

ERM: Can you think of any others that might have involved any other special uses of that area?

JHS: Let's see. I find it difficult to recall any other specific examples.

ERM: Did you have any other problems connected with wildlife?

JHS: Wildlife was the one resource with which we were especially concerned in our forest treatment. We were trying to build up a deer herd and improve fishing. There were some beautiful streams in the mountains, but some of them did not provide the best fish habitat. We built deflector dams to create pools. Care was taken to leave shade along streams after timber treatments and to protect the banks from erodi ng. In road construction, efforts were made to stabilize road banks to hold soil in place and to install proper drainage. The people in the mountains were greatly interested in the work that was provided through the employment of local people as straw bosses in the camps and in the work afforded on timber sales. You see, this was just after the depression, and one of the things they particularly needed was work opportunities.

ERM: Could you generalize at all about the attitude of Forest Service men during the thirties toward recreational users of the lands for which they were responsible? And I ask for such comment, not necessarily as a reflection of your own personal feeling at that time, but maybe your own personal feeling as it compared with, let's say, the general feeling that might have existed among other Forest Service personnel.

JHS: It's always difficult to generalize and be sure that you really are representing the truth. But as I think back to those days, I do know that all of the staff on the forest and the rangers were so interested in being able to extend our recreational facilities that I don't recall anybody being anything but favorable to it.

Another thing that we did a lot of in those days was stream improvement. We constructed dams or deflectors in the stream to provide places where fish could hide or rest. There was a great deal of interest among the people in the area in this work. They were all interested in fishing. I'm sure they all realized that these facilities would improve the food supplies and the habitat for fish life.

ERM: The very fact that you were very much involved at this time in wildlife management ideas and experimentation lead on to your joining with [Paul] Roberts in coauthoring that section of the Copeland Report published in 1933, which dealt specifically with wildlife management problems. * Did you feel at that time that wildlife was being given insufficient attention by the Forest Service?

JHS: I don't think that this was my feeling because on the Pisgah Game Preserve, which had been in operation for quite a few years before that time, they were giving a great deal of attention to the management of deer. An important task of management on the preserve was to move surplus deer to other areas for restocking. This was done in two ways. Adult deer were trapped and shipped to other national forests or sold to state game departments. Fawns were picked up a few days after birth, raised by hand feeding until weaned,and then shipped to other areas. Deer from the Pisgah helped to restock the Nantahala.

I previously mentioned a game refuge on Wayah Creek. This area was stocked with Pisgah deer and carefully protected so that the herd would grow. This was a cooperative project with the state. It wasn't a federal refuge; it was a state refuge, and the state employed a man locally to be the warden on it. The Forest Service

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*U. S.,Congress, Senate, A National Plan for American Forestry, S. Doc. 12, 73d. Cong., 1st sess., 1933, pp. 489-510. Also known as the "Copeland Report." For Roberts's recollections, see Paul Roberts, "Forest Service, Issues and Legislation to 1951." Tape-recorded interview in 1965 by Amelia Roberts Fry, University of California Bancroft Library Regional Oral History Office, Berkeley. In process.

cooperated very closely with the state in this wildlife effort.

The Forest Service would like to have had money for more wildlife management work. We were restive, as young folks are, about not being able to proceed faster with what we thought should be done. There wasn't any policy of the Forest Service holding us back. It was a lack of money and manpower, until the advent of the CCC.

ERM: All right, this was at the very early stages of your career in the Forest Service. How do you account for the fact that you were called upon to author with Roberts this particular section of the Copeland Report?

JHS: I don't know that I can account for it. I was detailed to Washington, D.C., to work on the Copeland Report in 1932. This was before the time when we had the Civilian Conservation Corps. The Copeland Report was one of the periodic efforts of the Forest Service to determine status and needs of the forest land resources of the nation. To do this the Forest Service had to draw on all the people they could get. They figured that I was a young forester and that my background was such that perhaps I could do some good. Also, I'm sure they wanted to give me the training of a Washington detail.

ERM: Had you written anything on wildlife management that might have drawn their attention to you as particularly able as a coauthor on this?

JHS: No, I don't recall having written anything particularly in the field of wildlife before this. Of course, I had written a number of reports. On the Allegheny I wrote a report on the research plots that I established. This drew the attention of the experiment station, and then they took them over. I guess the Washington office just needed another hand and concluded I could do the job.

ERM: In that section on birds and mammals of the Copeland Report, you stated, "...it is safe to state that the forested and wooded lands of the country provide all or part of the habitat for a major percentage of the remaining wild life...."* Much more data has been gathered since then. Do you see the forest land of this country, either declining or increasing, as a factor in wildlife population?

JHS: I think that forests under management have been able to provide for larger game populations, particularly deer and elk, than would have

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*U. S., Congress, Senate, A National Plan for American Forestry, p. 490.

been possible before harvesting or without management. Improvement in markets during and following the Second World War increased harvesting opportunity. Proper cutting of the forest does provide more browse and a diversity of cover that animals require. So I think that the forests by planwise management can support more wildlife than ever before.

Throughout the Civilian Conservation Corps days one of the requirements in our specifications for timber stand improvement was that a given number of den and food trees be left for the smaller game animals on each acre. Unquestionably there was more food supply and a better cover made available by the cutting that was done.

ERM: Do you feel that wildlife management was a real consideration forty years ago in the eyes of those who were responsible for forests and natural resource management within the Forest Service? How much importance did they really attach to it?

JHS: I don't quite understand who you mean by they.

ERM: Your superiors--your immediate superiors and those up the line to the policy makers.

JHS: I think that many of the supervisors that I worked with during the initiation of the Civilian Conservation Corps and even before were concerned for the welfare of fish and wildlife. Some were more interested in these uses than others, but I never found any of them who would urge that I pay less attention to wildlife in our planning for timber harvest. Inspectors from the regional office looking at timber stand improvement by the Civilian Conservation Corps examined the attention given to den trees left or the protection given to stream banks. Some of the inspectors were men who were assigned staff responsibility for wildlife at the regional level, but I don't remember anybody that felt we were going too far in our wildlife management.

I think that most of the men were concerned that we should do a good job of timber stand improvement and at the same time be concerned about the food supplies and the cover for wildlife. The assistant regional forester in charge of timber management was Robie Evans. His concern was the treatment of the forest, but he was also concerned that we do a good job of taking care of den trees and game cover. I would say that the leadership at the regional level was strong for multiple-use management. I never encountered

anyone who did not support multiple-use management. We didn't talk about multiple use so much then, but we sure practiced it.

ERM: How much credit do you think the Forest Service can rightly claim for making wildlife a major part of the multiple-use concept that has developed since that time?

JHS: I think that they've had a substantial part in it because I just don't know of any areas where this wasn't a matter of concern in managing the national forests. In Pennsylvania we were concerned with the number of deer because we were beginning to experience some damage from overbrowsing, but this was not a matter which turned us against wildlife. We felt that the deer crop ought to be harvested. Harvesting was a prominent part of management of the Pisgah Game Preserve. We wanted to keep a proper balance between the wildlife population and the vegetation.

ERM: Do you think there was a time in which other agencies and other privately supported groups played larger roles in this area than the Forest Service?

JHS: I'm sure that the state game people were quite concerned about wildlife. They were interested in the food supplies for wildlife being improved. I may be getting a little ahead of the story now, but I do recall also that during the Civilian Conservation Corps days we did some things such as make cuttings for the purpose of improving the food supplies for wildlife. The state game people favored these cuttings, but I believe much of the initiative for making the cuts was from within the Forest Service. We had a few biologists in the Forest Service at that time. They helped to stimulate wildlife thinking within the Forest Service itself.

ERM: In reading through the Copeland Report, I was impressed by the fact that you and Mr. Roberts decried the lack of factual information regarding the full extent of our wildlife resource.

JHS: Yes.

ERM: Why do you suppose this data was so long in developing in a nation so full of hunters, fishermen, bird watchers, nature hikers, etc.?

JHS: [Laughter.] Partly because the money was not available with which to get factual data on wildlife. I can recall that in the Copeland Report we received information from all regions. The data was the best that could be provided, but it was quite evident that

some figures were based on informed guesses. The Forest Service has required for many years a report from each ranger on game population. There was little systematic survey information in which to base these reports. Rangers talked to game wardens, local people, and their own personnel. These views supplementing their own observations, formed much of the basis for these wildlife census reports. Occasionally some systematic census work helped guide judgments.

ERM: Yet there has been for maybe seventy-five or a hundred years before this, all kinds of associations and clubs and societies which were reputedly interested in wildlife and in fish and birds. Why do you suppose there was such a lack of good data on wildlife in the face of all this organized activity on the part of the American people?

JHS: Woody, you've got to remember that in the early thirties and the twenties the state game departments were pretty largely just made up of wardens to enforce the game laws. There were few technical biologists. Many of the state game departments at that time were political rather than scientific agencies. Technology on game management was in its infancy.

Previously, I alluded to the first deer census made on the Pisgah when I was supervisor. We undertook to make the first real scientific census. What we did was to divide the area into a number of units. Statisticians from the Appalachian Experiment Station helped us decide how many units would be needed and where they ought to be in order to get an estimate of deer population within a given percent of accuracy. We used a whole CCC camp to make the census, stationing boys around each unit to count as others drove the deer out. This was the first real census that I knew anything about. We devised it ourselves. We had a forester who had had some special courses in school in wildlife, and he was in charge of the work. We had the help of other scientists from the station in designing the test. It was the first time we'd had the manpower and the money to do this. We found the deer population greater than we had been reporting. Actually, we had been underestimating the deer populations and probably other animals, also.

The technology of wildlife census has improved over the years. I'm sure there are better and cheaper methods now, also more accurate. But the Forest Service started early in this field.

ERM: Do you have any notions at all of what the factors were that most influenced this rather late-blooming American concern for economic and social wildlife values?

JHS: [Laughter] . There were many foresters in the Forest Service who had always been hunters and fishermen. They were interested in wildlife and in other services and products the forest could provide. There were biologists in the universities who were writing about wildlife and habitat. These articles were read by many foresters and gave them ideas. Then there were people outside the Forest Service in game clubs, the American Forestry Association, and other conservation organizations who had an interest in the forest and who kept up with conservation literature.

Another thing that stimulated the interest of sportsmen was the rapid growth in deer population that took place when deer hunting was prohibited. This happened in many states. Complete protection against hunting and poaching led to the growth of deer population on the Pisgah. In Pennsylvania the deer population had gotten down to a very low level in the early part of this century. There were few deer left in Pennsylvania. The state stopped hunting. After about a dozen years of complete protection, the deer population became so numerous as to cause damage to vegetation in areas of concentration. Then foresters began to notice that some of the young trees they were planting were being nipped. The future of these plantations was in doubt.

ERM: I am wondering whether or not there had become a heightened public interest in this matter in recognition of declining wildlife populations which frustrated the Americans' interest in hunting and fishing? To what extent do you think that may have stimulated public support of the kind of research and data gathering that was a necessary preliminary to scientific work such as you were hopeful of doing ?

JHS: Yes. Public interest began to grow. Game clubs, which had been concerned about the lack of deer and earlier supported complete protection now took an interest in harvest plans. Sportsmen's interest was in building deer population by hunting bucks only. As deer numbers began to threaten the browse supply, proposals were made to harvest does as well as bucks. This idea brought opposition from many sportsmen. To meet their opposition more information was needed on deer habits. Research was needed, but money for this was slow in coming.

Connecticut had a similar experience to Pennsylvania. When I was a kid in Connecticut deer could not be hunted. The deer population began to increase quite rapidly. As I mentioned, I remember walking up in the woods in back of our place with my father and brother. We generally had apples in our pockets to eat

ourselves or sometimes to feed the fawns who were quite tame and would smell the apples in our pockets.

ERM: Do you believe this contributed to the gradually evolving concept of multiple use both at the state and federal level?

JHS: Yes. I believe it's fair to say that, although I believe the average sportsman had little knowledge of the interrelationships in the forest. He was almost wholly interested in the deer population. The more hunting success, the more satisfied he was. Most of them did not then realize that too many deer would have an adverse effect on the vegetation and, consequently, on the animals in the long run.

Leaders in Multiple Use

ERM: Herb, did you know Aldo Leopold at all?

JHS: I met him once, but I never did really know him. I was just a young forester. I think it was at a Society of American Foresters meeting that I met him. I listened to him talk and I guess was introduced to him, shook his hand, or something like that. But I never really knew him.

ERM: You didn't have such acquaintance that might provide out of your memory any insight into this man?

JHS: No. I did, of course, read quite a bit of his writing, particularly in connection with the Copeland Report.

ERM: How much did he influence you at the time?

JHS: I suppose everybody that had information on wildlife influenced me. I wasn't a wildlife authority, and I was much interested in all these reports from the men in the field and in the articles that Leopold had written.

He was particularly concerned, as I recall, with some of the habitat problems relating to pheasants and birds. He protested the elimination of the hedgerows in the plains country. I can remember being quite impressed myself with the mistakes that the

farmers were making in eliminating hedges because they provided the habitat for birds that would eat some of the bugs that bothered their crops. I'm sure I got that from some of Leopold's writings.

ERM: Do you think Leopold had any very considerable impact on the development of the multiple-use idea?

JHS: Now, that's a little hard to say. I'm sure he had an impact in broadening the outlook of the foresters of the time on land management. He was partly responsible for developing a realization that there was something besides trees in the forest. I think he probably had a real impact.

ERM: Who do you think of as being the prime thought leaders in the movement?

JHS: In the multiple-use movement?

ERM: When you look back, who stand out most vividly in your eyes as being the thought leaders?

JHS: That's a little hard to pinpoint because I think it wasn't one; I think there were a number of people.

ERM: That's why I said the leaders, not the leader necessarily.

JHS: Yes. Well, let me think a bit here. I think some of the men in the experiment stations influenced my outlook. Charles Hursh was one of those. Charles Hursh was an engineer, I believe. He was on the staff of the Appalachian Forest Experiment Station and headed up their water research. He was the man who was responsible for the planning and the initial development of the Coweeta Experimental Forest on the Nantahala National Forest. The research on this area has made great contributions over the years to the understanding of the relationships of water to land use and land use to water.

I had a number of contacts with Charles because in 1932 he came to the Nantahala forest looking at possible sites for a program of water research. I had the responsibility of finding several potential areas for such a program of study. I had some real interesting conversations with him, and I believe that he stimulated my thinking on water more than any other person. Although I do not recall talking about multiple use, it became clear to me that land use and water quality and yield were inseparably interrelated.

ERM: The uses of the forests are many and diverse. Was there anyone you recall who gave multiple use real meaning?

JHS: Yes, I think Hursh is one such person. Clarence Forsling, who became director of the Appalachian station, had this broad concept of the interrelationships of the forest and water and wildlife. We also had a fellow on my staff, Bill Nothstein. Bill was another forester who had a wide interest in all land resources. He was a professional forester, but in addition to an interest in trees, he was concerned with wildlife and water, and he understood the relationship between them. I think that Joe Kircher, who was the first regional forester in Region 8 , had a broad interest in land management, although not quite as inspirational as Charles Hursh. Hursh and I really had some interesting conversations on water and land management.

ERM: How well formulated do you think this idea was prior to 1960 when the Multiple Use Act was enunciated and put into legislative form?* How well had it been formulated in the thought of foresters, both inside and outside the Forest Service?

JHS: I think the concept of multiple use had been recognized by foresters in the Forest Service for quite a number of years before 1960. When I was stationed in Milwaukee I remember hearing some discussion of the term. It seemed to me that the term really described what we were striving for in the management of forest land.

We saw many examples in the Lake States of concern by land managers for uses of the forest other than timber. There was considerable discussion of wildlife, less of water. At that time Bob [R.R.] Hill was chief of the Division of Wildlife in the Milwaukee regional office. He impressed me with the importance of wildlife, its need for browse and cover, and the relationship of their use to the management of the forest. Water did not really play such a big part in the flat, sandy soils of the Lake States, but

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*Multiple Use-Sustained Yield Act of 12 June 1960, 74 Stat. 215, 16 U.S.C. sec. 528-531 (1964). For the text of this act, see Appendix B, p. 182.

it was an important factor of management in the Ohio Valley and Missouri. Ray Bassett, a recreation specialist, brought a professional view to recreational development and planning. All of us were aware of water and soil problems in the unglaciated country of Ohio, Indiana, Illinois, and Missouri and considered them in planning roads, recreation areas, and timber harvesting.

In the eastern forests, the land manager's job was rebuilding a wrecked forest, one in which not only was the timber supply low but often other resources had been damaged. This task is different from the job of placing a virgin forest under management, which was the objective of management in the western national forests.

ERM: Forestry in federal service was a custodial job at that time, I've heard.

JHS: Before the Civilian Conservation Corps, management was largely a custodial job. After the Second World War, the development of roads, equipment, and markets rapidly brought intensive management to the forests of the country and made good multiple-use management more important than ever.

ERM: What states or what regions of the country would you say moved most effectively into an adoption of multiple-use ideas? Would you say that the western states took the idea more seriously than those in the South, the East, or the Midwest?

JHS: No, I think this concern appeared and took form in the southern and eastern forests first. However, it's pretty hard for me to judge that, not having worked in the West at that particular time.

ERM: But then you did work out here later.

JHS: I worked out here later, and I found that we were designing and buiding a road system to put the virgin forests under management. I found concern for designing roads to avoid erosion, to serve recreationists as well as timber, and to avoid adverse impact on wildlife and scenery. The finesse and technology was not as refined as today but there was a growing realization of the need for improvement and for relating our activities to soil limitations. Wildlife habitat and range studies had been made out here years before. Ed Cliff himself was a wildlife specialist on the staff in the Portland office in the thirties or forties. I don't know just when it was. There was a great deal of concern about wildlife and range habitat.

ERM: And were larger budgetary allowances made for it in the East than in the West?

JHS: On the federal game preserve in North Carolina we had special funds allotted for the management of the refuge and the deer herd on it. This money was largely for protection and the employment of game wardens. But we did have substantial funds, too, for wildlife observations and study.

ERM: Do any other leaders in the development of the theory and practice of multiple use come to mind?

JHS: Yes. I want to mention two other men, leaders in the Forest Service, who did have an influence on me. One of them was Lyle Watts. I worked under him when he was regional forester in Region 9 at Milwaukee, and I always remember him as an individual who was interested and concerned with the management of resources other than timber on the national forests. Later on I recognized the same kind of leadership which he was giving as chief of the Forest Service.

Another individual who impressed me with his concern for multiple use was Jay Price. He followed Watts as regional forester in Region 9. Jay was a fine individual and one who inspired those who worked with him. I think the illustration of his great interest in multiple use is indicated by his active participation and leadership in the development of the Quetico-Superior Canoe Area on the Superior National Forest. He was a member of the international committee that prepared a management program for the area. He gave it a great deal of leadership and contributed many fine ideas to the development of a policy to guide the management of the Superior National Forest in harmony with the Quetico-Superior program.

It is interesting to note that Jay Price was a graduate engineer. Jay was a very broad-gauged individual and one who had a deep insight into the interrelationships between all of the resources of forest lands.

ERM: What specifically do you remember about Watts's contribution? You said he was an inspiring leader, but that's a bit vague.

JHS: Perhaps I can illustrate Lyle Watts's interest by some examples of contacts I had with him in the field. I remember being with Lyle on a forest area--I think it was in eastern North Carolina--and we

were looking at an area on which there was some fine young timber which needed thinning. The area had possibilities as a campground. We got to talking about what to do here. Lyle emphatically pointed out that in the management of the area we shouldn't let the fine timber overshadow the objective of managing the area to protect and develop the scenic and the recreational values. He made it clear to me that scenic values of the forest were equally important with timber supply.

ERM: Approximately what date was that?

JHS: This must have been about 1947. I also recall talking with Lyle one time when I was in the Division of Timber Management in Milwaukee. This must have been about 1938. Lyle stopped at my office one day. We got to talking about management plans. I recall that he mentioned that, while timber was a basic crop of the national forest, we also needed to recognize the relationship that the harvesting of this crop might have on wildlife and recreation. He pointed out that recreation was particularly important in many areas in the Lake States. I had many contacts with Lyle after he had retired as chief. He moved to Portland, and we had discussions of recreational problems in Region 6. Lyle was always laying emphasis on not letting timber just overwhelm the recreational values that we had in wilderness areas and in areas which should be developed for campgrounds.

The Copeland Report

ERM: Stepping back to an earlier period in your career--and I'm referring specifically again to what you and Roberts wrote in the Copeland Report--on page 492 of that report I find the following statement: "Common sense demands that working plans, not only for the development of this resource, but for its coordination with broad plans embracing other forms of land utilization, must be based on sound, fundamental facts."* Now to me that sounds like it carries in it the germ of the multiple-use concept. Does it ring so in your recollections now?

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*U. S., Congress, Senate, A National Plan for American Forestry, p. 492.

JHS: Yes, indeed, it does. In reviewing these reports and talking about wildlife on the national forests, it was clearly evident that there were instances in which there had to be this coordination or you would defeat your efforts to develop wildlife populations.

Some of the experiences on the Pisgah were in mind, where the deer had been protected and the populations had increased to the point where damage to the forest was beginning to appear. It seemed evident that if this overuse continued, the food supply would be depleted and wildlife would suffer as well as the vegetation and soils. Instances were reported from Pennsylvania where these things were happening because of too many deer. Better balance between animals and vegetation was needed.

I can recall now one instance where deer were starving to death in one valley because of imbalance, while five miles away there was an area with plenty of feed and few deer. The deer simply would not move to the better range. Now this certainly illustrated to me that the habits of deer in a specific area must be understood and taken into account in any forest land management program. Do they move around much or are they inclined to stay in a small area? It was evident that more facts were needed about deer habits in order to design an overall land management program that would provide for the future of the deer as well as the future of the forest upon which they depended.

ERM: This is a fact that imposed itself on me a great many times when I worked in Washington with the Forest Service to see what a tremendous number of meetings are always going on within the Forest Service headquarters. This same phenomenon is encountered when you get out into the field units, too. I never saw a bunch of people that are so constantly meeting with one another for the purpose of discussion and testing ideas and tearing apart a plan that might have been proposed by someone. So I think this is a kind of built-in characteristic of the Forest Service, which is probably true of the scientific community generally. You are always hesitant to go rushing ahead into something without first checking it out thoroughly and trying to build up some sound data upon which you can base your plans. And this is very frustrating sometimes to impatient people like me. I want to move ahead faster, but I think I see why you work the way you do.

JHS: There are a lot of meetings, and I think all of us have wondered about the necessity for them. But when you have a big organization with a lot of people involved, and particularly with the diversity of

professional backgrounds of individuals, this mechanism for interchange of understanding is important. It is necessary that the staff operate with an understanding, not only of their own particular field of activity, but the relationship it has to others. These interrelationships often come out when people get together. Timber people need to know what the impacts will be of the various silvicultural alternatives on wildlife habitat. The selection then can be made of a system which will optimize the needs for both timber and wildlife. These things must be known to both timber and wildlife people. Indeed, it will be those people working together with a common understanding who help develop plans.

ERM: Do you see a negative side to this process?

JHS: You mean negative side to meetings? I suppose that the most negative factor is that they take so much time. When people are coordinating and exchanging ideas, they aren't laying out campgrounds or making game studies or marking timber for harvest. We operate under restricted budgets and always have. So priorities of projects for time available must be determined. Is this meeting something that is necessary, or should we put the preparation of timber sales and the preparation of game management plans ahead of the meeting?

ERM: Do you think there's perhaps some tendency to talk things to death?

JHS: Yes. This is a human weakness, I think, not only among foresters, but among other folks, too. One of the bad features of some of the meetings of the past has been a tendency to talk "within the family" about subjects on which there wasn't any real disagreement. We were talking to ourselves when we ought to have put time on some other project or perhaps in sharing ideas with groups other than our own organization.

ERM: In all this discussion, Herb, and, also, in what you wrote in the Copeland Report, there seems to be no mention at all of the National Park Service or of any private wildlife or conservation group producing any input to the collection of data or the debate of the issues surrounding the management of forest resources. Is this, in your view, a fair statement for that time? Do you in retrospect see that it may have been an era in which the Forest Service was the only mover?

JHS: I never had much contact with the National Park Service in the areas in which I worked and so, naturally, wasn't specifically familiar with the Park Service people or programs.

ERM: You were talking about the lack of data in the Copeland Report. Now, I presume that you were talking about the lack of data concerning wildlife populations. To what extent did you look broadly across the spectrum of possible sources of such data?

JHS: Yes, I see what you mean. Well, during the development of the Copeland Report, we worked with the Bureau of Biological Survey. They provided considerable information. I remember going with Paul Roberts one day to Paul Redington's office. Paul was then the director of the Bureau of Biological Survey, which was a part then of the Department of Agriculture. We talked with him and some of his staff people about many wildlife problems. They gave us such data as they had. But data was scarce at that time on wildlife from any source. Much of what we were able to get were opinions or judgments or estimates. I do not recall any contact with the Park Service on things of this nature. I really do not think they had any. I am sure we were not trying to ignore the Park Service, and we certainly had no feud with them.

ERM: How much help did you have in doing the research you had to do before writing that portion of the Copeland Report? Did you and Roberts do it all on your own, or did you have assistance from others?

JHS: We had the input from Forest Service regions throughout the country, from the Biological Survey, and from a number of state game departments. Some of the reports from the regions contained data obtained by them from the state game departments.

ERM: This word or compound word, input, is a great one today, and it's used constantly. What do you mean by input as it applied in that particular instance? Was it a systematic attempt to draw forth specific pieces of research information that you needed? How did you go about getting it from the field?

JHS: All of the regions were asked to submit, for example, population figures on various game animals. In preparing those a number of them went to the state game departments to get them to help them estimate these wildlife populations. Some of the estimates were based on sample studies that had been made by the regions or by the state game departments. I think all of the information we got from Pennsylvania came from the state game department because there was only one national forest then in Pennsylvania. I think we had reports from most all of the states where there were no national forests.

ERM: Would you characterize the flow of material to you and Roberts as more fruitful from any one area of the country than another? Did you get a bigger input, let's say, from your field units in certain sections, recognizing, of course, that you had many more units in the West than you had in parts of the East?

JHS: I don't believe my memory is sharp enough to identify any area of better information than another. One of the things that stands out in my mind now is the information we had with regard to game birds and hedgerows in the central part of the country. Perhaps this is that it impressed me rather than the fact that we got better information or more information there. I don't think we received more information but some of it was pretty interesting to me. Some of this information was based upon studies that had been made by the Bureau of Biological Survey and by the state game departments in those areas. I'm sure we had better population figures on big game from some of the western states. This we received from the regions.

ERM: Here's something I found very interesting in the reading of the Copeland Report, and it is again drawn from the section which you and Roberts authored, and it's on page 492. It reads as follows: "In the multiple-use management of the national forests game has for many years had a definite place, particularly in the West where there has been for the most part a close coordination of effort between State game departments, the Biological Survey, and the Forest Service."*

JHS: I'd forgotten that I used the term multiple use then [laughter]. This must have been one of the early uses of that word.

ERM: I think that's interesting. I'm not sure that a deeper and thorough combing of the Copeland Report might not also turn up similar uses of the term in the writings of others who contributed to it. But here, at least in the section on birds and mammals that you wrote about, it is specifically referred to as the "multiple-use management" of the national forests. So it must have been as early as the early thirties that there was a concept of management within the hierarchy of the Forest Service.

JHS: I think that's right. It has been my impression that this term isn't something that developed lately. We had the concept in mind in all of the management that we were doing in those days.

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*Ibid.

ERM: It's interesting also that you say that this concept of management had "...for many years had a definite place, particularly in the West where there has been for the most part a close coordination of effort between State game departments, the Biological Survey, and the Forest Service."

JHS: Yes. I don't know what was meant by many years. You should remember that early in an individual's career, many can be as little as five years. Years loom larger in those days. Later on, the years seem to move along at almost kaleidoscopic frequency. But I should add that I believe multiple use as a concept had its root in the famous letter of 1905 from Secretary [James] Wilson to Gifford Pinchot. This recognizes conflicting uses and provides a broad guideline for reconciling them.

ERM: Let me ask you a question, then, about the writing of that section of the Copeland Report. How was it written? It was jointly authored, but how did you and Roberts go about the writing of it?

JHS: I wrote this section of the Copeland Report in the first rough draft and in subsequent rough drafts. After I would write it, Paul Roberts would review it, and he would make suggestions for changes. I would make these changes. Then he would review them again. From Paul they went to Earle Clapp. Clapp was the top guy in the development of the Copeland Report. Everything had to pass his desk. I think he read everything that went into it many times. Frequently he'd come back with suggestions that were pretty generalized, but it was evident that he wasn't happy with something in the report. Then we would have to try to figure out how to rewrite it. I rewrote it, I'm sure, a number of times and finally submitted it to Roberts. He may have written more revisions after I left.

I was on detail in Washington on that report for a couple of months. I forget just exactly how long. It must have been all of October and November and maybe some of December. In that time I compiled the data and read all of the material that had been sent in from whatever place. Then, I suppose, Paul and I prepared an outline. Then I went ahead with the writing.

ERM: In the Copeland Report you made no mention of the National Park Service or of any private wildlife or conservation group as producing any real input into the discussion of the matter up to that time.* Why was this the case? Can you explain why these groups

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*Ibid., pp. 489-510.

were not contributing any real input on the discussion, let's say, of wildlife preservation?

JHS: I think the national parks then were contributing to wildlife preservation but not to wildlife management. I don't really know why we didn't get any reports from any of the Park Service people. We may have, but what they were doing then was not management but preservation. They had real game problems in some places even then.

ERM: Were their interests more narrowly described than yours, do you think?

JHS: Oh, yes. They were concerned with maintaining the natural conditions on a piece of land and not in managing it as I view management. Perhaps they would disagree with that and claim they were managing it for its natural potential. That's all right if that's what you want to call management. But there was nothing really that they had to contribute to an assessment of the wildlife situation and problems in the country. Now, I don't know about private organizations. You're thinking of such groups, I guess, as the Izaak Walton League and the Audubon Society. I don't recall any information being obtained from any of them because, in the first place, in 1932 they were not nearly as active. The Izaak Walton League was primarily a sort of a fishermen's group that liked to get together to discuss which fly was best where. I don't recall them having anything that would contribute to this situation.

ERM: You say on page 492 of the Copeland Report that it was the state game departments and the Biological Survey and the Forest Service which were making the primary inputs in regard to these matters. Now this is rather interesting to me because it would indicate that in your view at that time the most concerned groups in the West were the state game departments, the Biological Survey, and the Forest Service. No mention of the Sierra Club or the Audubon Society or The Wilderness Society or any other group that would normally, in today's consideration of the picture, be cranked in as major participants.

JHS: [Laughter.] Yes. At that time I had never heard of the Sierra Club. I'm not sure that the Sierra Club was known very widely except in California. The reports that we got in from the western regions were the ones on which I had to base, first of all, the inventory of game population and also the estimate of the degree of management and the needs for management. I think if the Sierra Club had made an input that the California Region considered important, they'd

have said something about it. Since they didn't, I would assume that no contribution was made. You know when we talk about the West, we're talking about the country west of the Eastern Region, and we had quite a bit of input from game departments in the central states like Illinois, Iowa, and those areas. So the only thing I can say is that in the information I had there was no indication of any contribution from these other groups.

Hunting and Multiple Use

ERM: Herb, in your writing you have referred to the American tradition of hunting and have distinguished it from the European tradition of hunting as a sport of the nobility and privileged class. I wonder how this fact of history may have influenced the development of a multiple-use concept in America. Do you have any ideas in regard to that?

JHS: I suppose that we were all imbued with the importance in a democracy of everybody having the equal opportunity to participate in this kind of recreation. This business of having any one group blessed with a special privilege was repugnant to us. So this fact of history in Europe, which I got from the various material that I read, impressed me as being something that we must avoid in this country. America would not stand for this kind of preference. I don't know that I can tie this to the development of the multiple-use concept. One of the things that impressed me in reading on some of this European experience was the fact that they gave a great deal emphasis to the harvesting of the game crop. Game was a crop just as timber was. In other words, we would harvest the defective trees in our cutting. Similarly, the European foresters would give to the harvesting of the deer the same priority. The old and the defective would be harvested first. Wildlife seemed to be given top priority over everything else. The result was that the balance between wildlife and the habitat would sometimes get out of balance.

ERM: To satisfy the needs of a privileged aristocracy?

JHS: That's right. Timber suffered from too much browsing to satisfy recreational desires of the privileged hunters.

ERM: That leads me to ask you this question that has been gnawing at my mind for some time. Do you see multiple use, perhaps, as a concept that might have developed only in a democratic society, perhaps for the first time in North America?

JHS: It seems to me that multiple use had a much better chance in this country than in Europe where the needs and desires of a privileged group were given high priority. Ordinary folks had the privilege of raking up the leaves, twigs, and branches in the forest for fuel in their homes. These rights interfered with good multiple use. Game populations were maintained at a high level. Continuous removal of leaf litter left soils less protected from trampling. I think in the American concept of forestry the interrelationships between all elements of the forest community can be fully recognized acre by acre, and management, designed in harmony with those relationships, can serve best the needs of all citizens. We are not limited by tradition and custom as are many European land managers.

ERM: I think it could easily be shown that the forests of Europe were largely managed up until relatively recent times primarily for the benefits of a few rather than for the uses of many. Is there any parallel in your view of the management of the forests up until recent times in this country, where we may not have had quite the same emphases as in Europe, but where, perhaps, the forests had been managed for the most part for the interests of a relatively narrow segment of the society rather than for the great majority?

JHS: There have been a few instances where land has been acquired here by game clubs or individuals for a special purpose and all other people have been locked out. This is inherent in private ownership. I don't think that this is a parallel to what happened in Europe. Perhaps I should limit what I say with respect to Europe. I do not believe that the forests of Finland, Sweden, and perhaps Norway were managed for the nobility.

ERM: And Austria?

JHS: Austria and perhaps Switzerland. I do not know the history of those areas, but in modern times in Finland anybody can hunt. I think that's true in Sweden. The forests are managed primarily for their timber, but there is some recreation and wildlife.

ERM: Opportunities for the general public to hunt and fish, for example, in the Scandinavian countries, as I've seen them at least, are far less than they are in this country.

JHS: That's true.

ERM: It's a privileged condition of living that applies pretty largely to only a relatively few people who can afford it. You don't have public hunting and public fishing over there the same way we have here.

JHS: I'm not really too familiar with those Scandinavian countries, but I had the impression that they hadn't had the feudal ownership there.

ERM: Not to the same extent I think that they had in some of the southern and central European countries, but, still and all, there are more restricted opportunities there for the general public than is the case in this country. Are you yourself an ardent hunter, or have you ever been?

JHS: I have hunted. I wouldn't say that I'm an ardent hunter as are some people. I have liked to get out with a group and camp and hunt, but I never put much emphasis on killing anything. If I didn't find anything to shoot, it was so much the better. I had a chance to walk around through the forest and enjoy that part of it.

ERM: How would you characterize the hunter as you see him and observe him today with the hunter of forty years ago or early times in our history?

JHS: It seems to me that there's just more of them today. I don't believe there's really any great difference. You have game hogs today as there were forty years ago. There were people who were true hunters then, taking game only for their needs. There are hunters today who get off the road and in the backcountry to hunt and who follow the game laws. Perhaps there are more road hunters today because there are more roads.

ERM: What I'm getting at is, do you think that the great trend toward urbanization in our society has done anything at all to the character of hunting or the hunter?

JHS: I think that perhaps the urbanization of the country has resulted in more road hunting. People from cities just don't like to get out and walk, and some of them get lost pretty easy. The Forest Service spends quite a bit of money hunting for lost people, both hunters and recreationists.

ERM: I wonder whether any changes that have taken place in the character of man in his pursuit of this kind of recreation, this kind of sport,

have had any impact on the multiple-use idea. Do you think they have?

JHS: I do not know whether the change in character of the hunter has had any impact on the multiple-use idea. But some of the modern hunters often have little idea of the relationships between vegetation and animal populations. This makes the actual application of multiple use more difficult. The road hunter who does not see many deer concludes sometimes that the deer population is low and that doe deer should not be hunted. If this attitude prevailed, it might prevent proper deer harvest and handicap good multiple-use management. We've seen some of this in Oregon. It isn't a new phenomenon. In the thirties I remember the fight in Pennsylvania on the subject of killing does. Does produced the fawns and they should be given special protection.

ERM: One thing that I'm wondering a bit about in posing these questions on the character of the hunter is that it seems to me that hunting has become far more an organizational thing. Many, many more people hunt today and are members of organizations of hunters than was probably true forty or fifty or sixty years ago. Am I right in that assumption or wrong?

JHS: I think more hunters belong to game clubs. On the other hand, there are many more people hunting who do not belong to game clubs. I don't have any information to support this belief, but I think that there are probably more people hunting today that don't belong to game clubs than there used to be.

ERM: But is it not also true that organizations are better equipped to bring pressure to bear on management agencies like the Forest Service?

JHS: This is true. Groups like the Izaak Walton League and Wildlife Federation are organized nationally and have strong national offices. These national offices get input from individual local clubs. National offices with their staffs and news organs are able to coordinate efforts of their member clubs. National offices bring pressure on Congress and agencies to influence both administrative policy and legislation. Local clubs work on state legislation and administration. So I'm sure that the sportsmen are much better organized today than they ever have been to influence conservation activities and policies.

ERM: We maintain that one of the products of a democratic society is that the people influence the course of policy through discussion and

the application of pressure through their organizations, and I wonder whether this isn't a factor that needs to be analyzed a little bit in understanding how multiple use came to be a policy that was applied in the Forest Service.

JHS: I think that people have had an influence on multiple use through their organizations. No one could deny that the Sierra Club, The Wilderness Society, timber organizations, and others have pleaded their special interests so as to make public land managers more sensitive not only to these individual interests but to the need for working out a harmonious and diversified combination of uses carefully related to site characteristics and potential. This constitutes multiple use.

Development of Southern Forestry

ERM: Do you think there might have been much gained if twenty years ago you had taken more initiative to seek out and talk with the so-called preservationist groups in society to get from them a direct exchange?

JHS: I think that we did make mistakes twenty, twenty-five, thirty years ago in not trying to involve some of these people, who we now call preservationists, in our planning. I think that we weren't quite as sensitive then to the importance of doing this. There were some reasons why we did not give as much attention to preservationist groups twenty to thirty years ago. There were not nearly so many of that type of people as there is today. It was user groups, such as stockmen, who were opposed to measures which would add to costs and reduce profits. They were sensitive to measures that would affect adversely their economic position and were not concerned with ecological impacts of resource use which would cost money to control.

ERM: Did you feel more comfortable and assured of your role and your authority in this area?

JHS: I suppose you could say that, but there was plenty of pressure from user groups. I don't like, myself, the term comfortable. It signifies complacency. But the facts are that people then were not quite as

concerned with their natural resources as they are today. Timber and range people were, because their bread and butter was affected by forest management policies. We didn't have quite the same degree of preservationist concern then as today.

As an example of public interest in the early thirties, in North Carolina and north Georgia, we had to spend much time trying to get people of that area to be concerned about fire. Burning the woods was a habit which had been practiced for years. Many city folks viewed burning as a natural event that took place in the forest every spring and fall. Sometimes at night they'd look at the fires ringing the mountains as something pretty.

This attitude began to change during the thirties. When I was in Atlanta in 1946 and 1947, we had a Keep Green meeting in Atlanta, Georgia. We had over seven hundred there, including bankers and lawyers and businessmen, from all over the state. These men were concerned about preventing fires. Now, in the early thirties we never could have gotten that kind of a group together. As a result of the educational efforts and partly, also, as a result of a growing appreciation that forests constituted a resource that was important to business and industry in the state of Georgia, business and professional men began to recognize that fire prevention was more than just an emotional or an aesthetic matter. It was a matter of dollars and cents. The pulp industry grew rapidly in the South during the thirties, and these pulp mills were dependent upon the forest for raw material for their mills. Other businessmen and bankers began to recognize the economic tie.

ERM: Do you think that that trend in the thirties in the South, was an early manifestation of the multipe-use idea becoming accepted at the level of state government?

JHS: I don't think that the developments in the thirties were a reflection of a growing understanding and interest in multiple use. I think they were more a reflection of the growing awareness that forests of the South, particularly the young growing forests, were a raw material that was important to their economic welfare. I'm sure that in many areas the growing interest in stopping fires arose from people realizing that they had jobs in mills that were dependent upon this timber. If the timber was burned over, their employment might be affected. The income upon which they and their families depended might be cut off. So I think that the growing interest in

the forests of the South was not so much a matter of recognition of multiple use as it was realization of economic value of the resource.

ERM: Particularly as it related to harvesting crops of pulpwood and timber?

JHS: That's right.

ERM: Would you say that any one or several states performed more notably than others in the beginning of this movement? What states do you associate with having caught the idea sooner than others?

JHS: Well, of course, now there are fifty states. At that time there were forty-eight, and I was familiar with only a small number. But we're talking now about the period of the thirties.

ERM: Yes. And into the forties.

JHS: Among the southern states I think that the most rapid growth in awareness of the value of the forest took place in Georgia and South Carolina. Those are the states that seemed to have the leaders to guide and foster this progress.

ERM: Quicker than their other southern neighbors?

JHS: I think so, but you must remember that generalizations and comparisons of this sort are dangerous and may not do justice to good developments taking place in most southern states at that time.

ERM: Do you recall any individuals who took the leadership in those states?

JHS: Yes. One man I recall now is Frank Heyward in Georgia. Frank was a state forester there when this growth began to take place. Frank was a very progressive individual. He gave both protection and emphasis to growing timber. Later Frank became associated with one of the pulp companies in Bogalusa.*

ERM: Bogalusa?

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*For more information on Heyward, see 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, 1959).

JHS: That's right. It was Bogalusa. With this company, he continued his effort in education in forest conservation. In Arkansas Fred Lang was state forester for a long time. Fred was aggressive in building a good protection organization and gave leadership to promoting good forestry. Arkansas has a fine forest area. Fred was assisted in his work by people at the Crossett Lumber Company at Crossett, Arkansas. Pete Watzek, president of the company, promoted improved management on company land and served on the State Forestry Board.

There were many people in the development of a forest consciousness in the South. It's dangerous to single out individuals. Many people from the U. S. Forest Service provided leadership, such as Charlie Evans, Henry Koen, Frank Albert, and others. Dr. [Charles H.] Herty by his development of processes, in collaboration with the Forest Products Laboratory, of using southern pine to make Kraft paper was one of the early ones to promote the protection of the forest and gain for trees recognition of their place in the economics of the South.

Forest Service Wilderness Policy

ERM: To what extent do you feel that, over the years, the Forest Service has tried to search for changes that were taking place in the character of American life, perhaps as a key to understanding their land management responsibilities? Has there been any real thought applied to that particular task, or have your studies been oriented more toward the technological or the purely scientific approaches to problems?

JHS: I think that the Forest Service has been concerned with change in American life over the years and has adjusted programs to meet these changes. I can illustrate that with a couple of specific cases in my own experience. You, I'm sure, realize that the concept of wilderness or primitive areas, as they were called then, was developed by the Forest Service in the late twenties. Some primitive areas were established. Then Bob Marshall came into Washington as a leader on the staff in the field of recreation. He gave strong emphasis to the addition of wilderness.

When I was supervisor of the Nantahala National Forest in the early thirties, Joe Kircher, the regional forester, suggested to

me that we try to get a patch of old-growth Appalachian forest to preserve. We were negotiating with the Gennett Lumber Company for the purchase of some of their cutover land in Graham County, North Carolina. I made a trip over this tract and also over some of the old-growth forest the company owned with Andy Gennett, president of the company and a fine individual. He had been a lumberman for many years. He was in his early sixties at the time. He had decided to sell his property and go out of the lumber business.

I was impressed with the old growth he showed me on Little Santeetlah Creek. There were some yellow poplar there, six or seven feet in diameter, five feet above the ground, and more than one hundred seventy-five feet tall. There were some excellent oak and hemlocks, also. Andy told me at that time that he had this optioned to the Ritter Lumber Company for $365,000. I asked him if he could get them to sell the Forest Service five hundred acres for its scenic and recreational value. He was sympathetic to this idea, and he said, "I'll see what I can do." When I left him, I said, "If anything happens that Ritter does not buy, call me."

About six or seven months later he called me one day and said, "Are you still interested in the Santeetlah tract?" I said, "We certainly are," and he said, "The Ritter Lumber Company tried to beat me down on price, and I told them that we'd just forget the whole deal, I got so mad at them. Our option is off, and if you're interested at the $365,000 price, the whole property is for sale to you, but I don't want to wait more than nine months for my money, and I'm not going to bargain on this price." We took the option from him, put our examination crews on the tract, about 5,000 acres, and completed our appraisal in about three months. The case was expedited in the regional and Washington offices. We met his price, and he had his money within the time he specified. This tract is now the famous Joyce Kilmer Memorial Forest on the Nantahala National Forest. Here was a case where the Forest Service adjusted its policy of not buying old-growth timber to meet a growing recognition of the importance of having land of this kind in the East.

ERM: Was the entire acreage preserved as that forest?

JHS: The entire acreage was preserved as that forest.

ERM: No part of it was sold and cut.

JHS: No part of it, to my knowledge, has been sold or cut. I think this was an illustration of our concern for beauty and scenery. Another example of the Forest Service moving to preserve wilderness in the East occurred when I was regional forester in Atlanta. I spent a little time looking at the Linville Gorge area on the Grandfather Division of the Pisgah. It seemed quite appropriate as a wild area so I made a recommendation to the chief that we establish it as such. This was done. But these were initiatives of the Forest Service in the early days of the wilderness concept. It was the Forest Service in the lead in recognizing the need for this new concept and doing something about it.

ERM: How much credit do you think the Forest Service deserves in the development of the wilderness idea and the preservation of wilderness?

JHS: I think they deserve a major share of the credit for it.

ERM: Who do you think were the principal leaders within the Forest Service who pressed for such?

JHS: It's a little hard for me to identify who it was in the early 1920s that took the lead in promoting wilderness because I was just starting my career in the twenties and wasn't close to the people in Washington. However, Bill Greeley was chief from 1920 to 1928. It was during his administration that the first primitive areas were established. During the thirties more attention was given to setting up wilderness areas under Chief F. A. Silcox. He was the one who brought Bob Marshall to Washington to head up recreation. I think a lot of credit should be given to Mr. Silcox for giving impetus to the development and expansion of the wilderness concept.

STATE AND PRIVATE FORESTRY, NORTH CENTRAL REGION, 1939 to 1945

Multiple Use in Private Forestry

ERM: From 1939 to 1945 you were associated with the Forest Service's Division of State and Private Forestry in the North Central Region, so let's move on into a consideration of multiple use in private forestry. Do you believe that multiple use is more successfully practiced on public lands than on private?

JHS: I think that's true. The objectives of management of private lands are much more narrow than the public lands, and that's the way it should be. Managers of public lands must consider the desires of the owners, which are all the people of the United States with their many and diverse wants. The objective of management of a corporate property must be to supply raw material for manufacture. Because the raw material is a resource, there are public aspects that must be considered.

ERM: Then with the growing population and the constant changes of the national needs, do you feel that public landownership should be expanded?

JHS: No. I don't think that public ownership should be expanded greatly. I'm sure that there are some properties that ought to be acquired. I would be a little more liberal than the Forest Service is able to be right now because of the lack of funds and the general opposition to more public ownership. I think that we ought to have funds so there can be a much more active and extensive exchange program in which forests are consolidated better. This would facilitate multiple-use management on public lands and private lands both. But I don't think that we need a large program of acquisition of private lands. I think some maybe ought to be purchased where they have some real value.

I used to think, particularly in the southern Appalachian Mountains, that an expansion of public ownership would be in the public interest. This would be one area where I would think we need to have more acquisition of private lands. Here in the West I don't view any large purchase program as needed.

ERM: To what extent did private timber holders during the 1940s and 1950s practice multiple use?

JHS: I don't think there was a great deal of it practiced by private timber owners in those years. When I worked from 1939 through 1945 in connection with private timberlands in the Lake States and central states, there wasn't any real conscious effort at multiple use. The big task in those areas was to try to get good cutting practices applied so that we would have a continual supply of raw materials for the dependent mills and communities.

There was one property in Michigan that I remember well. We worked with the owners, the Huron Mountain Club, to get timber harvested. This club used the property principally for recreation. Henry Ford was a member at that time, the old gentleman. The club owned a fine piece of old-growth, northern, hardwood-hemlock forest which needed management. It needed selective cutting, and this would benefit the club, and it would make the property, I thought, more usable for recreation. The country was fairly flat and the water resource could easily be protected under use. A harvest program would provide a better habitat for wildlife. The owners were a group of wealthy people who had summer homes there. One of the members was a lumberman who was especially interested in a management program. We prepared a proposal for management of the area. I don't know whether they ever followed the management plan which we prepared. Their interest was broad and was truly a multiple-use interest. The general public was kept out.

We worked with the Ford Motor Company and the Goodman Lumber Company and the Fox Lumber Company up there. These companies, I would say, were interested primarily in the production of the greatest amount of timber and the most valuable timber and not in multiple use.

ERM: Do you think that the private timber owners' failure to practice multiple use in that twenty-year period, the forties and the fifties, had any serious ramification?

JHS: I don't believe so. In the first place, there was plenty of recreational opportunity on the public lands in the Lake States, and I'm sure out here, too. There were some that had marked properties as closed to hunting. That didn't help their public image because the sportsmen then were very outspoken and interested in having some of these private properties opened. But many of the large owners permitted hunting on their land.

ERM: Their practices did not harm, evidently from what you say, the environment which we hear so much about now.

JHS: They didn't, except that in some instances some of these companies were just clear cutting large areas, and in the northern, hardwood forests I don't think clear cutting is generally a good technique. I felt at the time, and maybe today I would change my mind, but I felt at the time that selective cutting was a natural for the old-growth, northern, hardwood-hemlock forests. Typically it's an uneven-aged forest. Trees reproduce readily in their own shade. In the long run you can grow more volume and a better quality timber this way.

ERM: Do you think that the tax laws at that time played any important role in private owners' failure to accept and practice multiple use?

JHS: I don't know that it bothered them in respect to multiple use. It certainly was a handicap and stopped some of them from practicing a good type of silviculture like selective cutting. The tax laws, of course, varied with the individual counties and the state. Some counties were more concerned with maintaining their forest areas than others. But I would say that taxes were a limiting factor to good forest management.

ERM: How successful would you say the Forest Service's effort has been in encouraging multiple use in private, commercial forest land management?

JHS: I don't think that the Forest Service has given a great deal of attention to trying to promote multiple use on private lands until the last ten years. I know when I was working in private forestry we considered that the objective which the company had of getting the best supply of raw material was the objective of management. We didn't even try to sell them on recreational development, although this occasionally came up and was occasionally mentioned. Some of the companies did permit recreational use. Within the last ten years multiple use on private lands has been given more emphasis and owners urged to recognize all uses in their management.

Multiple Use and State Forestry

ERM: In the years in which you were in state and private forestry did you feel that the states excelled or lagged behind the federal government in the application of multiple use?

JHS: This is again a question I don't think that you can generalize on. Some states gave more attention to multiple use than did other states.

ERM: Which states stand out in your mind as among the best?

JHS: I think that the state of Michigan, as I recollect now, gave quite a bit of attention to the hunting use on the state forest land. They didn't have too much money to go in and develop campgrounds, but the recreational use of their lands was permitted and encouraged.

ERM: What about watershed management? What states showed the most lively concern?

JHS: The Lake States--Wisconsin and Michigan--were fairly flat areas, sandy soils, and glaciated soils. The watershed problems were not very serious. There was little erosion potential that existed in Missouri or some of the other central states. I think that Ohio, as I remember it, was one of the ones that gave a good deal of thought to water. They have a rolling terrain there.

ERM: The Muskingum Valley?

JHS: Yes, Ohio set up these conservancy districts. The farmers and city people were certainly interested in water early in the game. I believe this interest was stimulated by their experience with floods.

ERM: How much real state and federal cooperation is there in areas beyond timber and fire management? Do wildlife management, grazing, recreation, and watershed figure as important areas of state and federal cooperation?

JHS: Yes, they do. The experiment stations and even the regions work with state agencies. For example, Region 6 has worked with the state game department in Oregon in a study area on the Fremont National Forest looking toward the determination of food demands by deer. The experiment is broader than that, but I don't remember

the details of it now. There have been other examples over the years in which the Forest Service worked with the game department in development of wildlife assets.

One such project was Trillium Lake on the Mount Hood National Forest. Trillium Lake was a small lake with marshy boundaries. An arrangement was worked out with the game department to complete a dam started by the Civilian Conservation Corps but not finished. The game department put up money, and the Forest Service helped with the engineering. The dam was completed and the lake stocked with fish. More recently, on the Umatilla National Forest in Washington, the game department and the Forest Service cooperated in the development of Jubilee Lake, another fishing opportunity. Another cooperative lake development occurred on the Malheur National Forest.

So there's been quite a bit of this kind of collaboration, particularly within the last ten or fifteen years. Also, the experiment stations have carried on cooperative research in game and fish habitat. Their collaboration has been partly with the land grant colleges as well as with the game departments.

Game Management and the State

ERM: Can you think of any conflicts between states and the Forest Service over game management?

JHS: Of course, there have been differences of opinion between the Forest Service and the state game department. In fact, the state forester's office and private foresters were involved in the effort in the early fifties to get the deer season opening delayed from the end of September until later in October because of the frequent fire danger that often occurred in late September. There used to be some real arguments between the foresters of the Forest Service and the state forestry department and the game department on this issue. But they worked out a general agreement, and that has worked out pretty well.

Aerial detection and retardant use have helped to improve our fire-fighting ability so that we felt we could accept a little greater risk. I would say the Forest Service has been more

inclined than the state foresters or the others to open up the hunting season at the earlier time. This is probably because of the Forest Service's recognition of multiple use. The Forest Service felt that the wildlife crop needed harvesting to maintain a balance with the food supply and minimize damage to young trees.

ERM: Was there no conflict with the state game people when the secretary of agriculture came out with Regulation G-20A?

JHS: [Laughter]. Oh, yes. That was before my time here in the West.

ERM: That was in 1940 or 1944, wasn't it?

JHS: Yes. There was a wide area of conflict at that time.

ERM: What was the basis of the conflict?

JHS: As I remember it, G-20A authorized the chief of the Forest Service and the regional foresters to harvest the game crop when it was out of balance with the food supply and where game was damaging government property by eating up little trees or causing erosion. The G-20A authorized the Forest Service to kill the animals regardless of the state law. This was a challenge to the state ownership of game, and they didn't like that. Finally, I would say, it was resolved because the Forest Service didn't use it and did recognize that the states had the ownership of the game. Since I've been here, it's never been a problem, but I certainly heard about it when the regulation was adopted.

ERM: Well, G-20A replaced W-2, and W-2 was more in the spirit of cooperation with the state, was it not?

JHS: Yes. I don't remember the specific regulation, but with G-20A forest officers could reduce wildlife populations if the wildlife was causing property damage, regardless of the state.

ERM: Is it not true that for some time there was some question as to who owned the wild game on the national forests--the state or the federal government?

JHS: I suppose that's right. I'm sure that's right. There was some question, and I suppose the view was different in different places. When I was supervisor of Pisgah National Forest, we had a federal game preserve on the forest. When this federal game preserve was established, the state of North Carolina actually ceded the title to the game to the United States. The state had

always recognized this. We had regulated hunts without regard to state seasons. The state would always give permits to enable the hunter to take his deer outside the preserve. This permit prevented his arrest for possession of deer in a closed area.

Just before I left the Pisgah, when John Chalk was the North Carolina game commissioner, he decided that he wasn't going to grant these permits. They would arrest people. We cancelled the hunt because we didn't want to invite people to come in and have them get arrested. I got all kinds of letters. I remember one fellow wrote me and said that he'd spent $75.00 of his wife's meat money in order to buy a new gun to go hunting. He was a lawyer, and he was willing to go hunting and fight the case if he got arrested. But it was decided that we wouldn't go ahead with it. We'd try to resolve the case. Unfortunately, this decision by the state was made just before the hunting was to start. We'd already sent out some of these permits, and I had to write all of these people we'd sent permits to and tell them that they weren't going to have a hunt.

ERM: This conflict over who owned the wild game must have caused delays in the development of management policies for wildlife.

JHS: I don't think so. Actually, I don't think the fact that the game is owned by the state has any particular bearing on multiple-use management. The Forest Service had the responsibility to manage the habitat to support wildlife. Our concern must be that the resources be planned to provide a harmonious combination of resource uses. An example of this kind of management occurred on the Siuslaw National Forest in the 1950s. On the Mary's Peak watershed of the Siuslaw National Forest there was an infestation of Douglas-fir bark beetles. The Forest Service planned and conducted programs to harvest the timber from these infested areas. Following harvest, the areas were planted right away. Because this area had been in a city watershed, access was restricted. No hunting was allowed. The deer population was high. I saw one of our plantations in which 80 percent of the trees had been browsed by the deer. There were too many deer on the watershed and the vegetation was suffering. The supervisor worked out a program of either-sex hunting in collaboration with the city and with the state game department. A special hunt was arranged in which both bucks and does could be taken. It was done with the collaboration of the state game department as well as the city, and the deer population was reduced. Several hunts have been held, and the deer population is being brought gradually into balance with the vegetation.

ERM: When and how was this issue on the ownership of game resolved? Do you remember?

JHS: I really don't know the specific answer to this. I think shortly after this G-20A controversy reached its heights, the Forest Service decided they had to accept this ownership of game by states, and it did so. Forest Service people generally made a special effort to work cooperatively with the states. I really wouldn't be the one to answer your question because I just don't know.

ERM: Do you feel that federal aid, especially financial, to states holds any dangers?

JHS: No. I see nothing objectionable to federal aid for fire or tree nurseries as we've done under the Clarke-McNary Act. I don't see any problem involved here.

Multiple Use and World War II

ERM: You were director of a wartime-production project during World War II. During this time were there any pressures which made the application of multiple use difficult?

JHS: I don't think so. Of course, you have to bear in mind in the Lake States and central states we were dealing pretty largely with smaller ownerships, particularly in the central states. Our main objective was to get timber owners to harvest their lands and to practice good silviculture in doing this. The products were needed for the war effort. Then we worked with the mills themselves to eliminate bottlenecks to production that they may have had.

ERM: Do you remember any patriotic clamor of stockmen to stock the ranges more heavily or insistence of lumbermen to furnish more logs for the war effort?

JHS: No, not in that part of the country. We didn't have much in the way of grazing on the timberlands of the Lake States or central states. The cattle industry in Wisconsin was largely dairying. In the central states the corn–hog type of agriculture prevailed. Forest lands were not involved. But I don't remember great pressure on cutting. Our effort was to get the forest products cut, all right, on the private ownership but not cut without regard to sustained-yield management. We still wanted to keep that in the picture.

ERM: In other words, the war effort in your view did not really make any great drain upon the multiple-use practice?

JHS: I don't like to say it didn't make a drain on multiple use. It didn't hinder or change the good silvicultural practices that we had been trying to promote. Harvesting, under good silviculture, of products needed in the war effort was urged. Full scale multiple use on private lands in that section was not the rule at that time.

ERM: And you weren't familiar enough with what was happening in other areas?

JHS: No. I was working real hard in that area.

RESEARCH, CENTRAL STATES FOREST EXPERIMENT STATION, 1945 to 1946

Research Activities

ERM: From 1944 to 1946 you worked in the Central States Forest Experiment Station at Columbus, Ohio?

JHS: No, I went into research in September or August of 1945 and then continued on until about May or June of 1946. That was my limit in research.

ERM: What did your work consist of there, and what bearing did this work have on multiple use?

JHS: I went to the Central States Experiment Station in 1945 as the director. My work as a director was of an administrative nature. One of the programs that the station was concerned with was the reclamation of the strip-mined lands. There we were involved in trying to design programs for rehabilitation of the lands for multiple purposes, multiple uses. One of the things we were able to suggest in some areas was revegetation without leveling. The central states include much flat country. A few hills were an asset to multiple use. Lakes were formed between ridges of spoil material. The ridges were revegetated and game of various kinds brought in. I would say multiple-use programs figured prominently in our studies of strip-mined land rehabilitation.

ERM: Can you give us any other information about what you were doing at that time that had particularly to do with this area?

JHS: The station had a program which involved forest management, some economics, and soils. The station was not staffed with various skills as they are now. But the soil expert we had was carrying on studies of soils throughout the central states. These studies were quite valuable in the strip-mine study program because the key to the revegetation of many of the spoiled areas was the nature of the soil and treatments necessary to put the soil in shape to be revegetated. For example, on some strip-mined areas the coal which was taken out had a good deal of sulfur with it and underneath it. In such areas the soil banks were quite acid. On some

of the more acid areas the vegetation just wouldn't grow. The pH was way down. It seems to me I remember hearing of some pH readings of one, which is very, very acid, and no vegetation would grow in it.

ERM: Will you explain for the record what you mean by pH?

JHS: This is a measurement that soil people use to determine the acidity of a particular soil. A pH of around six, is about neutral. If it's above that point it's alkaline, and if it's below six, it's acid. When you get down to a pH of one, it's very acid.

We had studies in progress on forest management. We were starting the first survey of the timber resources of the state of Kentucky. Those were some of the station programs that I recall now. We had a broader program than that, but it's quite a few years since I was there, and the memory of many details escapes me.

ERM: Do you remember any particular experiments that had to do with the compatibility of multiple uses of the land in that area?

JHS: No, actually, at the station at that time we weren't carrying on the studies of multiple uses as such. We were really carrying on functional studies. But some , such as the rehabilitation of soil banks in the coal fields, had a very heavy multiple-use implication. In other words, the rehabilitation of the spoil banks provided opportunities, not only to grow timber, but also to develop some of the other services that the forest could provide and that the area needed.

Freedom in Forest Service Research

ERM: Who decided what areas and what subjects would be researched in the station at that time?

JHS: The station had a program of research which had been developed before I got there. It was reviewed and revised each year and altered to meet the changing circumstances. But in research many projects are long range. You don't change programs very sharply from year to year. One of the things that affects and controls the program is appropriations by Congress. The reason we got into this rehabilitation of the strip-mined areas in such a big way was that Congress enacted a special appropriation

of $50,000, as I remember it, for the Forest Service to go into this study. There was beginning to be concern at that time about the way these areas looked after the coal had been removed.

There were strip mines in Ohio, Illinois, and even in Kansas. We had a unit of the station working on this project in Pittsburg, Kansas. There was quite a lack of information on what to do and how to revegetate. There had been some tests made. Some companies had attempted to level the land and plant, and they'd had varying success in planting. Some plantations were failures. There wasn't the information available on what the factors were that had to be taken into account in a rehabilitation program. The public became increasingly concerned, and this was reflected in pressure for a research program to find the answers.

ERM: Now, this research was generated as a result of congressional concern and action over the strip-mining matter. It was not generated from within the station, I take it. It was something that the station took on because of public concern and congressional action.

JHS: I don't know whether I can accurately remember just what the genesis of the program was. Now, I do know that the coal companies had been under some criticism from the public and they had talked with the Forest Service people. It's quite probable that the Forest Service had been asked by them, "What do you need to find some answers?" The Forest Service had advised them that a research program would be required on a continuing basis and it would take so much money. Congress then appropriated $50,000. I doubt that I can say that this was generated entirely outside of the Forest Service. Much of this started before I came to the station. When I came to the station we were just about to receive the $50,000 and set up a rehabilitation program of research.

ERM: What part of the research program of a research station in the Forest Service comes about as a result of projects that its own director and staff generate, and what part is generated from headquarters in Washington or by Congress?

JHS: I don't believe I can say in a categorical way that 50 percent is generated inside the Forest Service and 50 percent outside because I just don't know. But I would say that in the past a substantial part of the program which the experiment stations carry out comes as a result of recommendations within the Forest Service. Now, some of it may originate by somebody asking the Forest Service to

try to get some information along this line. The Forest Service looks over the problem,or maybe they already know something about it, and they tell them, "With our present resources we aren't able to attack this. These are the things that need to be done, and this takes so much money, and we can put it into our next year's program, but then Congress will be interested in how you folks and others feel about it." Now the Forest Service has a long-range research program that serves as a base for annual appropriation requests. This has to be updated currently.

ERM: I take it that there is seldom any feeling that research is being forced upon the researching staff, that their freedoms are being curtailed in work that they want to do in order to do other work which is forced down upon them from the top.

JHS: I never ran into any feeling that the stations were forced into studies that they didn't want to get into. You must remember that my participation in research was limited to a period of about eight months. I don't have any long career in research to draw on for some of the impressions that I'm stating with regard to these things. However, I have tried to maintain a close relationship with research in my administrative activities. Representatives of administration meet currently with research people to review progress or suggest new projects or changes in old ones. There is input into the research program in this way from the other branches of the Forest Service and from such groups as industrial foresters, state foresters, forest schools,and universities. They all have representatives on advisory groups, which meet at least annually and in some cases oftener. It's in this way, really, that the programs of research are built up and are adjusted to meet new needs and new priorities.

ERM: Has research ever been reorganized along administrative lines in the Forest Service?

JHS: Research has gone through a number of reorganizations. I don't know quite what you mean by "if it's been organized along administrative lines." There used to be a sort of a similarity in research in that each station had someone who headed up forest management research, forest economics research, forest range research, etc. This was a functional staff that in some respects paralleled administration.

Then at one time stations were organized with territorial responsibilities. Research centers were established with one

individual in charge of this area with a staff to carry on research in a specific territorial area. This was not the most effective way to organize research, and so changes then were made. Research cannot necessarily be done best in a specific area. Research on soils may need to cover soil types in a number of jurisdictional areas. Some economic studies must be nationwide. So this territorial jurisdiction didn't quite fit the research needs.

That's been changed so that now they have an organization in which there is a director with a number of assistant directors who have certain responsibilities that are somewhat functional but also include administrative direction for research in a group of related functions.

ERM: Do you see then, that, the experiment stations have been reorganized in the last ten or fifteen years around the multiple-use concept in any way?

JHS: I believe their organization is much more suited to handling research in an integrated manner. Interrelationships between elements of the forest community are recognized. I think research results from this system better fit multiple-use needs.

ERM: That's what I'm getting at. Do you feel that since the strong acceptance of multiple use, the trend in the Forest Service has been towards organizing research along lines which would undergird that policy?

JHS: I think that the changing organization of research is probably influenced by the Forest Service's interest and concern for multiple use. I don't believe that that's the only reason for the organization because I believe that the leaders of the Forest Service have felt that this kind of research program is more flexible and can better meet the needs of today. For example, today research is often a team enterprise which may involve a soil scientist, a forester, an engineer, and--in some of their research activities--a social scientist. This is true of recreation research. Social scientists are involved.

ERM: By reorganizing research around multiple use would it not tend to bring credibility to administration policy, making multiple use appear more rational?

JHS: You mean by that, that research would be reorganized for the purpose of making multiple use appear a more rational program? If that's what you mean, I would say it's just the other way, that these

interrelationships are recognized, and research activities are being organized in order to insure that these interrelationships are considered in all fields of research.

ERM: In other words, research is not put into any kind of straight jacket to conform to any policy of the Forest Service.

JHS: Oh, that's certainly true. They're not straight-jacketed that way.

ERM: Therefore, the research stations do enjoy, I gather from what you say, a very large measure of freedom to develop research as independent scholars see best to pursue?

JHS: I think that's true. I think it's good. The project leader develops his own project. I don't mean by that that he doesn't have some advice from staff people in the director's office or even in the Washington office. I'm sure they do. Maybe sometimes they feel there's too much of it. But I do know they have a great measure of leeway to bring their own ideas into their work program.

ERM: When a man produces with his research a paper or a report which is submitted for publication by the Forest Service, how is it handled? What sort of procedure does it go through to be published, and how much editorial control is held on that publication by the Forest Service superiors of the author?

JHS: Of course, you remember I haven't been involved in research for some time, and my knowledge of this is of one who has worked through the station from the administrative side. There is a system, and I can't tell you specifically what the system is, that all of these publications must go through. The individual writes it, and then it's reviewed by a lot of people on the station staff. Then it may be submitted to others. For example, the station here made some economic studies. They were written up, and the region was given the opportunity to review them--the regional forester and his staff. We did and expressed our views to the director of the station with respect to these reports and pointed out some things that we thought needed to be given further review, things that should be considered with respect to their impact on policy and that perhaps hadn't been given enough thought.

ERM: Research is almost inevitably going to produce criticism of established patterns of doing things, and that is going to come down hard on somebody's toes. What happens when this kind of situation obtains in a research report?

JHS: The director of the station and the regional forester should and do maintain a very close relationship. Here in this region it was our effort to try to extend that relationship to a close one between the regional staff and the station staff. This is something you never quite develop to the degree that you're shooting for, but you keep on working at it all the time. Individuals are involved, and some individuals may be more sensitive than others, may be a little more difficult to work with. In general, I think, the system works pretty good, and it should provide for this coordination and avoid impasses. There will be differences in viewpoints. There is, I suppose, in everyone a sort of built-in resistance to change, but, on the other hand, I think in the Forest Service we have a large degree of recognition that we don't have the ultimate and we need better methods of doing things. So I don't think we have many problems arising because of one person having his toes stepped on. In case this does arise the director and the regional forester both can go to the chief, and the chief then will have the job of resolving the differences that exist. In my experience this has been very rare.

ERM: Can you think of any instances in which a piece of original research was done but provoked such a confrontation that it was not published by the Forest Service?

JHS: No, I can't think of a confrontation of that sort. I can think of a few differences that arose. One I think of right at the moment had to do with the naval-stores research in the South. The southern station had worked out a technique of using acid to spray on the scars made on trees to stimulate gum flow. This acid would make the gum flow two or three times longer than it would without the acid treatment. The station devised a piece of equipment used to apply the acid. They felt their research had been completed.

Yet our naval-stores extension men wouldn't recommend this equipment to operators because of problems with it. First of all, the glass bottles used were easily broken in the woods. They were handled by labor that was not skilled in the handling of delicate equipment like that. The equipment also involved a glass tube into which the worker would blow to spray the acid onto the cut. Acid would drip on their pants, and the pants would be eaten away by the acid. So the workers wouldn't use it. The research people felt that our regional personnel were dragging their feet in applying this new technique, and administrative people felt that researchers had not completed their work. This impasse was finally resolved. Research developed a new, plastic, squeeze bottle. This was about

the time that polyethylene became a usable material. It really wasn't available in any great quantity until after the war. The simple squeeze bottle did away with the problems of the glass bottle, and the technique was rapidly put to use.

ERM: Has such friction between the scientists and the administrative people been constant?

JHS: I think it's less so now than it used to be. I think that the scientists we have mostly recognize that research must meet the practicalities of application.

REGIONAL FORESTER, SOUTHERN REGION, 1946 to 1951

Multiple-Use Conflicts

ERM: From 1946 to 1951 you were regional forester in Region 8. Which of the multiple forest uses were most actively practiced at that time? Were there any particularly significant conflicts between uses in that region?

JHS: I can't think offhand of significant conflicts. I suppose one of the conflicts that existed in Mississippi was between the grazing of hogs and the growing of trees and the use of fire as a tool in management. Those were some activities that met some degree of resistance between those that were involved with them. For example, the people in Mississippi felt that they needed to graze their stock in the woods, and for this reason they wanted to burn the woods to make it green-up early for their cattle, and some of them wanted to graze their hogs in the woods, and the hogs would root up the longleaf pine seedlings and cause a good deal of damage there.

ERM: Now, this was right after World War II?

JHS: Yes.

ERM: Were those conditions of the grazing of hogs still a major issue that late?

JHS: In some places it was.

ERM: What would you say was the main concern of Region 8 in those years right after World War II?

JHS: Our job in Region 8 was rebuilding a wrecked forest. So we were interested in building up the capital growing stock of the forest that had been depleted by years of abuse. Region 8 is a big and diverse region, and the conditions are different in the mountains of North Carolina and Tennessee and north Georgia from the piedmont of the South and from the coastal plain. Arkansas is still another type of situation. So the conditions differed.

But in the coastal plain, a pine belt, the task was one of taking this land, some of which had stands of scrub oak not producing anything, and get good growing stock back on it by planting. So the planting program was very extensive in these areas. There was also a great deal of planting in the piedmont area, that rolling country between the coastal plain and the mountains. In the mountains the problem wasn't one of planting. I would say that in the mountains our task lay in trying to encourage a better type of land use, one which would fit in with the water and the soil situation.

Similarly, in the mountains of North Carolina a big problem was to get the land use modified to avoid grazing too many cattle in the woods on those soils, where soil compaction by the hoofs of animals would result in much greater overland flow of rainfall and siltation of water.

Throughout the piedmont and coastal plain we were concerned with improvement of the forest growing stock by planting, improvement cuttings, and thinnings. It was possible to thin the forest at an early age. With the development of the pulp and paper industry there was a market for small-sized wood. So in this period one of our great efforts was to build up our growing stock and initiate a management program which included thinnings at early ages to improve the growth and to make supplies of timber available for the industries. I recall one slash pine [Pinus caribaea] plantation that I visited on the Apalachicola National Forest in Florida which had been marked for its commercial thinning for pulpwood at eleven years of age. It was possible under such circumstances to do an intensive job of management.

Another program with which the Forest Service was involved was cooperation with states and private owners to encourage the protection and the building up of forest resources. National forests in the South included only about 6 percent of the commercial forest area. The bulk of the timberland ownership was private, and protection and good management for this area was especially important to the southern economy.

EUROPEAN FORESTRY AND MULTIPLE USE, 1940s through 1960s

Third World Forestry Congress, 1949

ERM: In 1949 you attended the Third World Forestry Congress in Helsinki. Did you find that at the time most European foresters were practicing multiple use?

JHS: No, they weren't practicing multiple use. They were really practicing the production of wood, I would say. Now, I don't mean this completely either because in Germany there was a great interest in wildlife. The maintenance of a good, healthy wildlife supply was an important objective of management. But, on the other hand, the hunting was all done by the foresters themselves, and it wasn't public hunting of the type that we have in this country. I didn't find that anywhere. I think in the Scandinavian countries there may have been a little more public hunting, but the people still didn't indulge in it the way they do here. Recreation was a substantial use of the forests there. The recreational use was largely hiking in the forests. I heard nothing about wilderness.

ERM: What about their concern over torrent control, over watershed management. Weren't they involved to some extent in what might be called multiple-use management?

JHS: Well, I saw some of that all right, down in the French Alps. They did have programs going on in torrent control, but they seemed to me to be largely engineering projects rather than involving the management of the woods. In Germany I also saw some erosion control; it was really research rather than a full-scale program of multiple use applied on the land. They were trying to find out in these test projects how they could reduce erosion on a given area. This happened to be on areas which had been clear cut by the British army in the World War.

The Germans were unhappy with some of these large clear cuts. They had a rather interesting term that they would apply to these areas. They would say," This is where we had some of the British bark beetle." Really, what they were saying was, "This is where the British army clear cut." They clear cut big areas. The Germans had no objection to clear cutting, but their clear cuts

were always relatively small. When the British army came in, they just cut large contiguous areas to get the timber.

ERM: How would you compare European and American application of multiple-use ideas?

JHS: I really don't think that the Europeans at that time were thinking much of multiple use. They were thinking of the production of forest products and of game. They were dealing with fairly stable soil, and so they didn't have as extensive soil problems as we have in some of these western mountains. They weren't giving much thought to the modification of harvesting practices to maintain a beautiful scene. Their country was beautiful, and maybe their view was simply that good forest management was good multiple-use management. There were many people at that time who held that view.

Democracy and Land Use

ERM: You have referred in your writings to the American tradition of hunting and distinguished it from the European tradition of hunting as a sport of the nobility and the privileged class. Do you see multiple use as a concept that might therefore have developed only in a democratic society, perhaps only for the first time in North America?

JHS: I think there's some truth in the idea that the multiple-use concept develops best in a free society. In Europe, where people seem to be more restricted by custom, if not by law, they don't figure that they have anything to say about what a fellow does with his land. Multiple use could hardly move ahead there as it can here. In an unfettered society people express their likes and dislikes more freely. Population pressures for all of the products and services of the forest, including recreation, may be changing this condition.

ERM: Well, certainly there is a great pressure of that kind in Europe.

JHS: Yes, there is.

ERM: Just as great perhaps as there is in this country or maybe even greater because the Europeans live within much smaller confines geographically.

JHS: Also, these pressures require more of forest products to serve and satisfy their needs. But I think it's true that the social, historic, and political climate under which people live must have some influence on attitudes toward multiple use. Multiple use can develop over there, but I think in this country where people are a little freer to express themselves and bring pressures to bear on the public officials there is apt to be more movement toward multiple use. I think Europeans probably are beginning to recognize the interrelationships that exist in the forest. But on a trip I made last summer to Europe I was impressed with the pollution problem around German industrial areas. I was handicapped not being able to read their newspapers, but it didn't appear in the conversations we were able to have that there was the same concern about these things as there is in this country.

ERM: Did you find that to be generally true throughout all parts of Europe in which you traveled?

JHS: It seemed to me that it was true in Germany and in Switzerland.

ERM: What about in England?

JHS: In England there seems to be a greater interest developing in environment. I don't know whether it's because they have had some real problems with their air pollution in London from emissions from chimneys. Until recently, heating was accomplished by burning soft coal in fireplaces. In London emissions from the many chimneys venting these fireplaces contributed to the famous London fogs. This kind of heating is now prohibited. The English are also trying to bring about the cleaning up of some of their rivers like the Thames River. I saw when I was there last summer a protest march from Hyde Park that was carried out by environmentalists. I can't recall now the specific subject they were talking about. There were so many protest marches going on there that we weren't able to keep track of all of them. The environmentalist group were carrying balloons, and I believe the balloons were supposed to be filled with air that was worth breathing, or something like that.

Fifth World Forestry Congress, 1960

ERM: Did you notice any differences at all in the discussions between the third and the fifth world forestry congresses, both of which you attended, one in Helsinki and one in Seattle? How did the discussion of multiple use change over the period of time between those two congresses?

JHS: There was much more discussion of multiple use in the Fifth World Forestry Congress. * There's no question about that. In the Third World Forestry Congress the discussions appeared to be more in the nature of wood supplies in the world and how they were to be met. There also were discussions of fire problems and educational needs. The subject of multiple use was much more apparent in the Fifth World Forestry Congress than it was in the third.

ERM: Wasn't it at the Fifth World Forestry Congress that Dr. [Richard E.] McArdle made the public pronouncement of the multiple-use policies? **

JHS: Yes, he talked on this. I forget now the exact subject of his talk, but it did relate to this. I think there was some other discussions of multiple use. It was evident that there were different views of multiple use and what it is. But at least there was a great deal of discussion of multiple use, which didn't appear in the earlier congress.

ERM: I had the impression from some foresters who attended the Fifth World Forestry Congress that the Europeans, for example, and some of the representatives of forestry from other parts of the world really didn't understand what we were talking about in the terms of multiple-use policy. Did you have that impression as well?

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*"Multiple Use of Forest Lands," In Proceedings: Fifth World Forestry Congress, 29 August to 10 September 1960, Seattle, Washington (Seattle: University of Washington, 1962).

** Richard E. McArdle, "The Concept of Multiple Use of Forest and Associated Lands--Its Values and Limitations." In Proceedings: Fifth World Forestry Congress, pp. 143-145.

JHS: Yes, I did. Some think that they're practicing multiple use because they believe that good forest management is good land management. Then I think partly it is that these European people, in the main, are dealing with a pretty stable soil, which is hard to damage. I think that perhaps some of the erosion in our country resulted from practices by people who came from Europe and were accustomed to a more stable soil.

REGIONAL FORESTER, PACIFIC NORTHWEST REGION,
1952 to 1967

Need for Multiple Use

ERM: In 1952 you were transferred to the Pacific Northwest. As you have worked in the southern, central, and now the Pacific Northwest regions, have you noticed any regional variations in the application of multiple use?

JHS: I think that here in the Pacific Northwest there is the opportunity and the need to practice good multiple use more than in any other area. We have an area that contains much scenic beauty. This beauty is intertwined with the timber itself. The forests are the headwaters for many of the streams, and the great snowpack in the Cascade Mountains provides water for domestic and industrial use. We have the great Columbia River, which is serving the country for transportation, and the Columbia Gorge, which is an important meteorological phenomena as well as a scenic attraction. All of these things are very closely related. Then we have the anadromous fishruns where the salmon and the steelhead come from the sea and go to the areas where they were born to spawn. The spawning beds often are forest areas in the mountains.

So all of these resources are closely related and all are of considerable importance to people. The timber is important. The scenery and the recreational opportunities are important. The fishery is important, not only to people that want to fish in our streams, but to the commercial fishermen on the oceans. Because these widely used resources are inseparably interrelated, it's more important than ever that a good brand of multiple use be practiced here. Now, I don't mean to say that it isn't important to practice multiple use in other parts of the country, but particularly in the Pacific Northwest it is imperative. Only under well-planned and expertly applied multiple use can the needs of the citizens of this country be met in the long run.

ERM: How close do you think we've come in this area to a true multiple-use application?

JHS: I think we're making good progress. It seems to me that the

existence of the national forest systems in the West has been one of the greatest assets of this area. The existence of these national forests has prevented the depletion of resources that could have, and probably would have, taken place had they not been in public ownership. I don't mean to say that if the lands had not been in public ownership they would have been destroyed forever, but had these lands not been in the national forest system, the economy of the Northwest would have suffered. Now we have forests that can sustain in perpetuity a substantial timber industry and a growing recreational business.

Had much of the scenery and recreational opportunities not been in the national forest system, the development of this resource would have been more haphazard and the basic values not as well protected. There has been no land-use planning to speak of outside of the national forests. In the national forest there has been land-use planning for some time, maybe rudimentary or fragmentary in the early years, but as time has gone on this planning and the execution of plans has been improved. We have interdisciplinary teams that are working now in various places to develop what I think is essential in multiple use and which amounts to good, long-range, land-use planning.

Interdisciplinary Planning Teams

ERM: How long has the interdisciplinary team been employed in the Forest Service?

JHS: It has been employed as such in the last few years, but I think that it wouldn't be fair to leave it at that. In the planning that's gone on over the years there have been experts from other disciplines brought together to help in the planning process. I mentioned previously the planning of a road system up the Rogue River from Gold Beach to Agnes. In this planning we had engineers, foresters, and landscape architects involved.

We have involved landscape architects in some of our harvesting programs where the harvesting was related to scenery or roads or streams. We have involved both engineers and foresters for many years in planning. So, I think, the interdisciplinary approach has gradually developed but has been used in its more

sophisticated form and identified as such in the last two or three years.

ERM: It seems to be going full steam ahead at this time because I know I encounter interdisciplinary teams at work quite frequently now.

JHS: Yes. It's moving ahead.

ERM: I think the use of this broad-gauged kind of approach to problems is one of the most encouraging signs I see in the Forest Service today.

JHS: I think it's a fine step myself. This kind of planning costs money. Money has been a limiting factor all through the years in the development of interdisciplinary planning. Each year we tell Congress we need this much money to handle our timber business, this much for recreation, and so on. The tendency has been to provide money for handling the timber business because timber harvesting brings money to the treasury, helps local industry, and is essential to housing. The economic impact of recreation, water, wildlife, soil, etc., is less direct, and funds for these activities are not provided to the extent needed. In spite of this deficiency, the Forest Service has moved ahead in the employment of landscape architects, soils specialists, and biologists, using timber funds. Most forests in this region now have landscape architects, soils men, and biologists.

Recruitment of these specialists started quite a number of years ago during the fifties. I was particularly interested at the start in trying to build up a set of soil maps for all of the national forests in the region. The work was moving very slowly when we learned of a system that a professor at Washington State University at Pullman had developed from a soils expert at the Pacific Northwest Forest and Range Experiment Station. A cooperative agreement was entered into with the station and Washington State College, and the mapping was completed. These weren't complete soil maps, and we had some flak from experiment station people in the chief's office who thought the more detailed, slower system should be followed. The best soil map no doubt is the kind that the technicians were advocating that we make. But the point was that if we used the money we did have to make detailed soil maps it would be many, many years before we had soil maps for our forests. Maps based on land form and geology gave us some needed information a lot sooner.

Appropriations for Multiple Use

ERM: Why did Congress give money for timber management and not for some of these other things?

JHS: I think that one of the reasons was that it was easy to show that expenditures for timber sales brought maybe ten times as much in receipts to the treasury. It's just good business from an economic standpoint, and even the Budget Bureau gave support to these requests.

ERM: But Congress is not sitting down there just to run a business.

JHS: No, they're not, but they're faced with demands on the federal treasury from all of the various governmental agencies, including the Department of Defense to run wars. There are pressures on Congress to cut federal budgets because taxes are too high. I think Congress will inevitably be influenced by such pressures, and they should.

I think the responsibility for an unbalanced financing of programs rests more with the Bureau of the Budget than with Congress. The Bureau of the Budget sets ceilings on the amounts the secretary of agriculture can include in the budget requests for his department. Then the departmental requests are generally reduced in order to keep the president's budget from being too unbalanced. After the department is given its ceiling, the secretary assigns ceilings to the various agencies. Then the Forest Service prepares a budget, and generally it's cut down by the department, and then it's cut back further by the Bureau of the Budget, and the Bureau of the Budget imposes various restrictions that make more costly the operations of government.

I think one of the worst features that the Bureau of the Budget has imposed is the personnel ceiling. The Forest Service has often gotten fund increases but a reduction in the number of people with which to execute a program. When that happens managers are forced to contract portions or all of a program. This often is the most expensive way to do a job and quality may suffer. For example, if engineering work is contracted, more detailed specifications must be prepared and high-priced staff engineers are needed to prepare those specifications and then to see that the specifications are carried out. There is considerably more nonproduction paper work involved in contracting.

ERM: Why doesn't the Bureau of the Budget recognize this very elementary fact?

JHS: I really don't know. I often wondered myself. They use this meat-ax approach. Perhaps they feel that's the only way in which they can deal with a tremendously big government establishment. I think partly it's the numbers game. The Bureau of the Budget and some of the congressmen want to be able to show a reduction in the number of people on the federal payroll.

ERM: So this is a political thing, isn't it?

JHS: I think in part it is. To me the intelligent way to control the federal establishment is by the control of funds. I don't know how many man-hours of work go into record keeping to control ceilings. We have to keep records that should never have to be kept. It takes somebody to do that paper work, and some of the money could better go into project work.

ERM: Now it's being cracked down upon even more, I understand.

JHS: Yes, I hear it is. It makes administration a real nightmare.

ERM: Has this been growing apace since you were administrator of a region? How has it increased over the years? When did it start to manifest itself?

JHS: Ceilings have been around for a long time, but in the late fifties controls were tightened and reports and record keeping increased.

ERM: What, under the Eisenhower administration?

JHS: Yes, it was during the Eisenhower administration. I don't say that it started then because we've had ceilings for some time. We never had to worry much about them. As a matter of fact, for awhile the only records kept on ceilings were in the chief's office.

ERM: Wasn't it once true, Herb, that the Forest Service had the reputation of having one of the best rapports of all agencies with the Congress? The Forest Service could get things out of the Congress that other agencies of the government didn't seem to be able to get out of it?

JHS: I think the Forest Service still has good rapport with Congress. In this region there's good rapport with the Congress of the United States or its representatives. We don't find too much criticism. Of course, we have such things as the Hatfield-Minum Bill and

the [Mark O.] Hatfield Bill to make a lot of wilderness areas, which we don't think are needed.* But our congressional delegation is under pressure from other groups. I still think our relationships with congressmen and senators are pretty good.

ERM: Well, the Forest Service has always had a reputation of making money for the government, as you've indicated, and the Congress would naturally feel kindly disposed toward an agency that was pumping great sums of revenue into the treasury. Now there seems to be a trend of public thought against that being done, and the Congress is reacting to that public trend, is it not? Would this not have some serious implications with regard to the relationship between the Forest Service and Congress?

JHS: I don't know if it will. You see, in addition to these reactions they're getting from people that think we're cutting too much timber and putting too much emphasis on dollar return, we have the other side of the coin with the timber industry needing wood supplies as much or more than ever before. They have some influence with the Congress, and they're bringing pressures to bear, objecting to some of the limitations being placed on the Forest Service timber sales. We have those forces from both directions, you see. I still think there's probably full recognition that the Forest Service is right in the middle on issues, and they're right where they ought to be.

ERM: There's an old saying, Herb, that goes something like this. You must be doing a good job when you're getting shot at from both sides.

JHS: Yes. I think public agencies should be subject to criticism, and I think they should listen to these criticisms. They should, however, not feel that they have to satisfy everybody because you just can't. Public officials must not get into a position of feeling that the programs have to be adjusted to meet every criticism. This is why we need more than ever good, solid long-range land-use plans. If we have these kind of plans and we have good techniques for carrying them out, I think we're going to be in the position to do for the people the best kind of a job of developing all of these resources. This is what the Forest Service is aiming to do.

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*U.S., Congress, Senate, A Bill To authorize and direct the the Secretary of Agriculture to classify as a wilderness area the national forest lands adjacent to the Eagle Cap Wilderness Area, known as the Minam River Canyon and adjoining area, in Oregon, and for other purposes, S. 493, 92d Cong., 1st sess., 1971.

Environmental Crisis

ERM: Part of the whole land ethic of this country over the last two hundred years has been predicated on the belief that man is making steady progress all the time and is increasing his standard of living and the quality of life. Do you think we have come to a plateau where maybe this ever-onward-and-upward progress is going to have to be limited by the dwindling supply of natural resources and the rising number of people that have to be served?

JHS: I don't believe that we ought to plan to reduce standards of living. I think our aim should be to try to make our forest lands produce as much as they can of all of these services by an even better job of multiple-use management. This I think we can do. We can grow more timber with techniques such as improving stocking in areas that are understocked, by applying good, sound forest management practices in the harvesting, by thinning forests frequently at close intervals over the life of the stand, and by tree improvement by use of the science of genetics.

I think by proper design and location of our road systems, more scenery can be made available to people and more campgrounds constructed. Use of the forest can be spread over a wider area, all in harmony with a program of harvesting. By proper design of our logging activities and using the best logging methods for given sites, the water quality in the streams that drain these forest areas can be improved. The temperature of the water in streams can be adjusted so that food for fish is increased and the habitat kept favorable. I think by this more intensive multiple-use management we can provide more products and services from our wild land area and still have wilderness. I suppose we might get to the point where we will have to say, "This is as far as we can go," but we have a long way to go before that point is reached. I don't think now is the time to think about cutting down on our standard of living.

We should pay attention to making our standard of living less wasteful. I think there's plenty of room for action there. For example, we can organize ourselves to sort out from our waste such things as glass and paper and aluminum and channel this material to manufacturing plants for reuse. Perhaps in the design of new products this matter of waste should be given more attention.

ERM: Do you think the Forest Service, for example, is doing enough

research in the recycling of waste wood products?

JHS: The Forest Products Laboratory at Madison has been a leader in research on utilization of wood products. I am not informed specifically on research needs for recycling wastes. I would suspect that the lab is working in this field but could probably do more with increased funds. Processes for recycling not only have to be devised but the application must be shown to be profitable.

Geographical Variations in Multiple Use

ERM: You've worked in both the South and the Pacific Northwest in administrative jobs. In the Southeast the Forest Service is less important in the total forest picture than it is in the Pacific Northwest. Would you agree with that?

JHS: Yes.

ERM: Has this difference made any difference in the application of multiple-use practices in these two areas?

JHS: You must remember that I left the South in 1951, which is some twenty years ago now. I've read some of the reports that come out of the South from time to time, yet I'm really not too well qualified at this point in time to say much about it. But I would say that the national forests don't bulk large in the forest area of the South. I think there's about 10 million acres of national forest land out of a total of 169 million acres of commercial forest land. I'm sure that on the national forest areas there, multiple use is of great importance.

This is particularly true of the forests in the mountains of North Carolina and in Arkansas. Perhaps there isn't quite the same multiple-use demand upon the forest of the coastal plain, and yet I do hear of demands in Florida for recreation and for wildlife. They don't have the same kind of soil problems as in the West, but they have others such as swamps. Swamps are important to the general ecology of an area.

There may be just a little bit greater public pressure on forest managers out here where the national forests make up almost

a third of the commercial forest area of the states of Washington and Oregon. Where there is so much public forest and where all of these resources are so closely interrelated, the need for multiple use is very great. In the southern Appalachian Mountains the development of recreation demand has tended to put the pressure on for more recreational use without serving the timber-supply needs of the region. This would be another factor that emphasizes the importance of multiple use down there, too.

Land Management Classifications

ERM: In Region 6 you have had for sometime two interesting classifications for land management; these are your landscape management units and a high-mountain policy. Can you describe practices employed in connection with these classifications and cite some examples of areas that are involved? *

JHS: We developed the high-mountain policy because we were asked to do this by the secretary of agriculture.

ERM: Can you think of any particular person or persons who were instrumental in the formulation of that idea?

JHS: Yes. When we were asked to develop a policy for high-mountain areas, I detailed one of our supervisors, Glen Jorgensen, to head up a small committee to look into this and to develop some policy guidelines for discussion. He proposed a classification for the forest areas of the region consisting of a series of zones. Starting from the lower elevations on the west side, there was the principal forest area. Next came the upper forest area and then the alpine area. On the east side was the upper forest, the principal forest, and then the sagebrush or the desert area.

There had been no specific definition given to us as to what to include in the high-mountain area, so we then defined the high-mountain area as the alpine area and the upper forest area.

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*U.S., Department of Agriculture, Forest Service, "Inspection, GII (Region 6 and NW Station, 1958)," memorandum by J. Herbert Stone, 10 January 1963, Portland, Oregon. National Archives, Washington, D. C., Record Group 95. See Appendix C, pp. 183-189.

ERM: In other words, there was some area of tree-covered slope in the high-mountain area. It was not up beyond the timberline.

JHS: The upper forest area was well forested, and there was some forest in the alpine zone as well.

ERM: When did all this take place?

JHS: This took place in the late 1950s.

ERM: This was before the great conflict and controversy over the North Cascades?

JHS: Yes. Anyway, we did develop this series of zones along with management directions. We didn't call them zones; we called them management areas. Within all of these management areas, there were defined landscape management units. These included the land along highways, along streams, and around lakes. The main resource to be given consideration in these landscape management units was scenery. Harvesting of the forest could be done in such a way as to maintain the scenery.

We further refined this landscape management unit to include a foreground area close to the highway and a background area. These landscape management units were of variable width. They had to be laid out on the ground, and some of them might be as much as four or five miles in width to include what you could see from the highway. But the management for the background area was different from that in the foreground. For example, in the background area there could be small clear cuts, but in the foreground area the harvest of the timber had to be conducted on an individual-tree selection or small-group selection basis. The harvest was designed to make the highway, stream, or lake more attractive with a healthy forest, scenic vistas, and the like. In the upper forest, as I recall, one of the important considerations was scenery. In the alpine area the soil, as well as the scenery, was especially important because this was an area of very delicate plant interrelationships.

Timber Sales Contracts

ERM: When do you remember the first terms protecting watershed, range, wildlife, scenery, and recreational potentials being written into timber-sales contracts of the Forest Service?

JHS: We've had in timber-sales contracts for all the years I've been in the Forest Service certain provisions for protecting streams, and often we had strips reserved along streams.

ERM: Are these restrictive terms written into every contract?

JHS: They're written into the contract wherever this kind of a provision is needed. For example, if a sale is made in an area which is an important watershed, special provisions may be included to keep tractors out of streams, provide chemical toilets for loggers, and maintain timber growth along streams to avoid water temperature changes. Sales made along scenic roads may require contract provisions to allow logging only in the season when recreational use is at a minimum. Our contracts would include provisions for the protection of scenery along streams, lakes, and roads. For example, one of the clauses often included was one which would prohibit the driving of tractors and dragging of logs through live streams.

ERM: How long ago was that restriction put into the contracts?

JHS: I shouldn't speak with too much positiveness, but I believe that there were clauses in contracts to protect streams in the early thirties, possibly before then.

ERM: Was it common for you to find that these contracts were violated and damages done for which you had to seek redress from the company?

JHS: No, most of the time what those clauses did was to alert the officer managing the sales so that when he saw a violation he would stop it right then. He was supposed to keep abreast of those things. I suppose if there was a situation in which a great deal of damage had been done, there might have been a possibility of a court case, but I'm not aware of any situations that ever reached that stage. There might have been some, but I just don't know of them.

ERM: In other words, the damage done by logging operations was usually nipped in the bud when it was developing, not after a great deal of damage had been done.

JHS: Yes. Also, I'm saying that that's the way to do it. I can't think of any specific cases, but when there was damage done the operator would be required to take action to repair the damage to the extent that this could practically be done. For example, if logs are left in streams, loggers have been required to pull them out.

ERM: Has it required the imposing of fines upon the contractors very often?

JHS: I don't know of any. The penalty would be in the extra cost a contractor would suffer to repair the damage.

ERM: Now, that happens not infrequently?

JHS: That's right.

ERM: Where they have to go back and repair it.

JHS: That has happened many times, I'm sure.

ERM: To what extent is multiple use taken into consideration in sales planning and contract writing?

JHS: It's certainly taken into consideration fully right now. If a multiple-use plan for a given area would identify an area that had great value for its scenery, then, in planning a sale in that area, the sale planner in his timber-sale report would recommend the things that ought to be done to protect this value. I think of a case in point, which I mentioned the other day. A sale was being planned of timber near Timothy Meadows Lake. The supervisor, the ranger, and myself were talking about the harvesting of timber on the slope across the lake. In preparing for that sale, the district personnel were making topog maps and determining the size of opening they could make in a clear cut that would not be too visible or impair the scenic features along the lake.

ERM: In October of 1966, you spoke at a symposium at the Green River Community College in Auburn, Washington, and at that symposium

you stated that, timber in the thick forests of Douglas-fir, hemlock, and true firs must be "...harvested so that the adverse effects on water and recreation are minimized." * What does that mean?

JHS: It means that in the design of the harvesting plan the roads be located so that they're not going to cause siltation of streams or landslides and that the drainage be properly installed and adequate. It means that the layout of the cutting unit itself be such as to protect scenic features. It means that in the harvest program along roads which carry much recreational traffic, a selective type of improvement cutting be used to harvest the trees and maintain the scenery. The planning for that sale will have to take into account all of these things and provide for modification or changes in the harvesting practice, in the logging practice, or in the road-building practice in order to protect those features.

Allowable Cut and Sustained Yield

ERM: How do you feel about the sometimes-expressed opinion that the Forest Service has gotten away from the ideal of sustained yield by the use of the term of allowable cut, which has come to be interpreted sometimes as a minimum cut?

JHS: I'm sure we have been guilty of misuse of terms. Allowable cut has sometimes been equated with sustained-yield cut. Technically this is not so. The allowable cut is a device for controlling our cut so as to provide an even flow of forest products to market within a sustained-yield program. A sustained-yield program, as I define it, means managing the forest to have continuous crops of wood products which can be harvested indefinitely at a given level of harvest. The sustained-yield harvest will vary from one site to another, and the management program for each site must be designed with an understanding of the productivity of the soil.

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*J. Herbert Stone, "Multiple Use--What is It? How is It Applied in Region 6?" Speech delivered at Symposium, Green River Community College, Auburn, Washington, 17 October 1966. For a copy of this speech see Appendix D, pp. 190-198.

But sometimes we speak of an allowable cut as being the sustained-yield cut, and they're not necessarily the same. However, there's no need to argue about these terms. In a management program we do have to determine how much we're going to cut each year, and we need to cut it in order to harvest the trees that ought to be harvested under our sustained-yield program. Sustained yield merely requires continuous or sustained production of tree crops. Theoretically a forest is on sustained yield if clear cut completely in one year, planted immediately, and left for the rotation period before another cut. But allowable cut is a very useful device in regulating harvest to serve best communities and provide stable, sustained employment.

ERM: What controversy has existed in Region 6 over slash burning?

JHS: There has been and still is a controversy about slash burning. There were some people who felt that there shouldn't be any burning of slash. I think the Crown-Zellerbach Corporation at one time felt that way. I think maybe they've changed a little. It is necessary in some instances to burn the slash because so much defect exists in some of these old-growth stands. This defect cannot be used, and so it is left on the ground. At times the volume of material is so great that planting is difficult. Besides that, the slash provides resistance to fire control. If lightening strikes in a slash area, it may start a fire which is extremely hard to stop. Those are two of the main reasons why the slash is burned.

There is another reason of importance in some places. In the coastal forests, alder comes up very thick after a harvest. The dense older thickets will shade out the planted trees or even the natural seedlings if the alder isn't held back. So in those areas slash burning is a means of burning back this shrubby growth already on the ground. The planted trees then have a chance to start growth before these sprouts from the roots take over. This is an important reason for the use of fire in some places.

I think that we're going to move away from slash burning. We actually are moving away. The last figures I have heard show that not more than 50 percent of the national forest harvest areas are burned now. The total amount of slash burning will become less and less. One of the reasons for this trend is that the second-growth forest will be healthier. There will be less defect to clutter the forest floor after harvest. So I think eventually we'll get away from burning, except in these coastal areas where we need to use fire to hold back the alder.

Air Pollution and the Forest Service

ERM: Has the furor over air pollution entered into this in any serious way?

JHS: It has, but I think we have met it. There are a couple of meteorologists on the Forest Service staff in Portland. They have defined the meteorological conditions under which it's good to burn and when it isn't good to burn. Now, no ranger can burn slash on his district without an okay from the office here which says in effect that the meteorological conditions will be suitable. If the slash is going to be burned at an elevation above a stable air mass, then the smoke will be dispersed right away and won't cause any pollution hazard. But if the slash burning is to be done below the stable air mass, then the smoke will be confined under that air mass. It may hang there for sometime and create air pollution.

So the meteorologist can forecast pretty well what these weather conditions will be. They will issue to each forest each day a forecast so that they can do their planning as to when to dispose of the slash. I think that this program of involving the meteorologists in this has made it clear to the air-pollution authorities that we are giving the right kind of attention to avoiding air pollution.

ERM: What about the claims that damage has been done to crops, particularly apple crops, by the burning?

JHS: Yes, I've heard that for many years. A man told me one time, an orchardist member of our advisory council for the Wenatchee area, that every time the Snoqualmie [National Forest] burned slash, the price of apples in Wenatchee went down 50 cents a bushel. There may be some element of truth in the idea that sun reddens apples, but so far as I know this has not been proven one way or the other, and I think it's not really a very serious hazard. I've heard some people that will say that the amount of sunshine fruit gets has nothing to do with the bloom or the apples. They claim that frost and temperature at night are most important. In any event, I don't think that most of our slash burning creates the kind of a smoke pall that would reduce the coloring of the apples and consequently reduce their value. It may be true in some isolated situations that this occurs. Our councilman was an orchardist, and he ought to know.

ERM: What about the opinion of some of the staff members of the Forest Service in this area regarding slash burning, especially those expressed by Ken Wilson? How would you comment on that?

JHS: What are the views that he expressed that you want me to talk about?

ERM: He had some strong feelings, evidently, regarding the slash-burning policy. Do you recall any of these?

JHS: I've had lots of discussions with Ken on this. Of course, his responsibility being for the protection of the forests from fire, Ken has been a little leery of leaving too much unburned slash on the ground. I think he has a good point. But Ken is also concerned that we move away as fast as we can from burning slash. He recognizes that even burning slash is a hazard because those fires sometimes escape. Also, it costs money to burn slash. So all of us, including Ken, I think, would like to get away from it, but he also knows that wildfire is many times worse than any slash fire because it may come during the worst burning weather. Most of the time the smoke is much denser and more particulate is poured into the air from a wildfire than from slash burning.

ERM: Do you think the time may ever come when it might be economically and technically possible to remove slash and waste from the floor of the harvested forest by some mechanical means like chipping? I recognize the difficulties of this in a terrain such as exists out here in the West, but that strikes me as being something for the future maybe.

JHS: I consider that chipping as a method of disposal is here now. Actually, improved utilization is one of the best means of getting away from slash burning. Where we can get better utilization slash burning may be unnecessary.

ERM: In other words, the chips from the limbs and culls and one thing and another can be salvaged?

JHS: Yes. We're getting some of that done right now in various ways. The Crown-Zellerbach Corporation has developed what they call a utilizer. This utilizer is a machine which can be taken into the woods. Small-sized trees are taken from an area before the main harvest. This material is debarked by the utilizer, converted to chips, and blown into a trailer for hauling to the mill. These small trees would be destroyed in the logging operation if they

were not harvested and would add to the debris on the ground. That operation has been going on in the Mount Hood National Forest for the past five or six years, I guess. I don't mean to say that it's being done as extensively as we'd like to see it done because there's a limit to the market for chips and only a few machines to do the job.

At Hoquiam, Washington, Werner Mayer of the Mayer Logging Company put in a chipping plant which uses entirely cull material taken from the Olympic National Forest. He brings in his logs with all of the defects included. He cuts the defects off at the mill and puts these blocks of defective material through his chipping plant. He also brings to this plant logs which are entirely cull and buys this material from other areas and hauls it in. The blocks of cull material go through a splitter which breaks them into three or four pieces. Then these pieces go into a drum that revolves and knocks the rot and bark off. The rot and bark go through a screen, onto a belt, and out into the debris pile. Then these chunks go from there onto a shaker screen where any remaining rot is removed and then into a hog where the clean wood is manufactured into pulp chips and sold to Weyerhaeuser at Aberdeen. More of those kind of plants are needed to handle the cull material that could be made available.

ERM: With the developing technology and research in chemistry and particle-board manufacture and all the rest of it, this may become more important as time goes on.

JHS: I suppose it's a matter of economics, but the more we can get in the way of facilities like these that would provide a chip that can be marketed at a reasonable price, the more of this we can get done. There has been a growing market for chips.

Possible Staff Reorganization for Multiple-Use Management

ERM: Do you believe that the historic linking of wildlife and range management has been a detriment to wildlife use?

JHS: You mean in the organization of the Forest Service, is it bad for a staff man to have responsibility for both range and wildlife?

ERM: Yes. Until about 1936 and the creation of the Division of Wildlife Management, wildlife was a part of range management. Even until today wildlife men in the western region are in the Division of Range Management, except in Ogden, Utah. Do you think that this works to the detriment of wildlife as one of the principal parts of land management?

JHS: I don't think myself that organization is as important as the men that you have in it. I think that if you have a man who is chief of a division of range and wildlife management who would have no interest whatever in wildlife, the program might suffer. He wouldn't give adequate attention to it. I really can't imagine selecting someone with no wildlife interest for such a position.

In addition, there are wildlife people on the staff under the division chief who are experts. If they have the kind of initiative that you want them to have, they will be pushing their division chief for adequate wildlife consideration. There are many ideas on how organization can be adjusted to get better multiple use planning and application. I have thought better attention might be given to multiple use if all resource activities were made the responsibility of the regional staff of one assistant regional forester.

ERM: In other words, he'd be a coordinator, linking the regional forester with the various special fields.

JHS: Yes. I had thought a number of times that this might help multiple use because it would give the individual who headed it up the responsibility for coordinating all resources. This intensifies top direction of coordination, which should help to get better multiple-use application. But I had not felt strongly enough about the value of this change to want to do something about it. I believe that you can have good multiple use with the present organization if everyone realizes the importance of multiple use and does his best to coordinate with the others.

ERM: Do you see that that organization has already taken place at the national level?

JHS: In a way it has. There is a system of deputy chiefs. The deputy chief of the national forest administration has a director of the Division of Timber Management, the Division of Range Management, and the Division of Wildlife Management and so on. The deputy chief has the responsibility for coordination, which formerly rested on the chief. The chief was obviously so busy and had so

many things to do that he was unable to do much coordination. It's quite a chore for the regional forester these days to do the best job of coordinating. That's why I have thought that a combination of resource activities might be the type of organization we would want to go to one of these days.

ERM: Did you ever recommend such a procedure to your chief?

JHS: No, I thought about it quite a bit, but I never felt that the time was right to make such a recommendation. We had good division chiefs committed to multiple use. The coordination was pretty good between these division chiefs. It just didn't seem like it was the right time to make the move so I never recommended it.

Multiple Use in the Pacific Northwest

ERM: You have worked in the Southern, Central, and the Pacific Northwest regions. Have you noticed any conceptions of multiple use, that is, the continual stress on one aspect as opposed to others, particular to any region or state?

JHS: Here in the Pacific Northwest the program of the Forest Service has been one of converting an old-growth forest to a managed forest. When I say managed forest, I'm talking about managed, not only for the harvest of the timber crop, but for the organization and the development of all of the other resources in harmony with the timber harvest program.

In the Northwest we have so much timber, such vast water sources, such outstanding scenic beauty, such a variety of vegetation, such wide differences in rainfall and climate, and such diverse land form and geology, all intimately interrelated, that the application of multiple use is more necessary than in many other areas. Management under multiple-use plans here is a most practical and realistic method to convert these virgin areas to managed forests and insure that they best serve the people of the country.

ERM: Is the West, then, the principal battleground of the controversy that's raging?

JHS: It has been the principal battleground. I would say the Northwest is the one that has the most complex problems. Some of the Rocky Mountain area, for example, may be a little more simple. In Nevada and Utah the opposition to multiple use is not associated so much with timber harvesting except in northern Idaho. The conflicts seem to be between use by domestic livestock, wildlife, and people. Not having worked in this area, I may not be too well informed. But I think that the Pacific Northwest, as I review the areas I've worked in, has some of the most complex and difficult problems of multiple-use planning and management.

ERM: In the speech you gave at the symposium at Green River Community College you spoke of four resource association zones that had been identified by the Forest Service in Region 6.* Could you describe the different land-use practices applied on each? First of all, you cited a grass-shrub association in eastern Oregon; secondly, the principal forest on the west and east sides of the Cascades; thirdly, the upper forest resources association; and fourth, the alpine resource association. Could you just expound a little on that?

JHS: Yes. We were struggling here in the late fifties and early sixties with trying to improve our multiple-use planning techniques and policies. We began to look for a concept that would enable us to establish a management policy that would govern these areas generally. We found it possible to classify lands in the national forests in four broad associations defined by vegetation, land forms, and climate. These associations were alpine, upper forest, principal forest, and grass-shrub. The definitions for these broad classes include the species, rainfall, and topography. I cannot recite the detailed definitions, but they seem to fit well on the ground, and they have been helpful in our planning, our management, and our training. Across all of these four associations is a classification based on use. It is called landscape management units. These units include areas along roads and streams and around lakes. Policies were then developed to guide planning in these various classes. I think our planning improved tremendously with these developments.

ERM: I think that what you're outlining now is recorded in reports and papers.

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*Ibid.

HISTORY OF THE MULTIPLE USES

Wildlife Management

ERM: The Pittman-Robertson Act of 1937 provided for federal aid to states for wildlife restoration.* I'm sure you will recall that legislation. Do you recall, Herb, when wildlife management became a really full-fledged profession in its own right, and do you recall when this became seriously practiced within the Forest Service?

JHS: It's so hard to pin definite times and dates on events of this sort. When I was supervisor of the Pisgah National Forest we had a wildlife man on the staff by the name of Fred Ruff. We also had another fellow on the staff who was a fish expert, and he helped design and construct some fish hatcheries on the game preserve there.

ERM: Was that even before the Division of Wildlife Management was created in 1935 and 1936?

JHS: It was around the same time. Let me see. Fred Ruff came to the staff there in 1935, and our fish man came there at that time. I think it was a little earlier, but it was right around the same time. Lloyd Swift came to the chief's office about this time, and I credit him with giving a push to wildlife activities throughout the Forest Service.

ERM: Do you know Tom Gill?

JHS: Yes.

ERM: Tom made a comment in an oral history interview made by Amelia Fry of the Bancroft Library some years ago in which he said,

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*Wildlife Restoration Act of 2 September 1937, ch. 899, 50 Stat. 917, 16 U.S.C. sec. 669-669i (1964).

"Foresters have had and lost their opportunity to be wildlife managers."* How would you comment upon a statement like that coming from a man like Tom Gill?

JHS: I don't know what he meant by this, but I assume that maybe Tom meant that foresters hadn't paid as much attention as they ought to have to wildlife habitat in the timber development and protection programs. It has seemed proper to me that foresters should manage habitat for wildlife but not the animal populations. This is a state responsibility in which foresters should be advisory. I don't feel that foresters have lost this habitat management opportunity or the advisory function. These are clearly theirs. The determination of seasons and bag limits, the control of the wildlife harvest, and wildlife research should rest with the state and federal wildlife service experts.

ERM: As a profession do you feel that wildlife management has not developed to the same degree that, let's say, the practices of silviculture have?

JHS: Well, that's perhaps true, although it's becoming quite a large profession these days. I think that the generalization that Tom makes, like all generalizations, is inaccurate. Foresters need biologists to supplement and provide to land managers the expert knowledge regarding wildlife habitat that we need to have. The Forest Service has had some biologists, and we've recruited quite a number of biologists here in this region. Some of these biologists have forestry training, and some of them don't. Fred Ruff was a forester who had some special training in biology, and this is true of a number of biologists that we have had. Biologists have helped to provide what we needed in land management. I don't think we could have expected foresters to become experts in this field as well as every other field.

ERM: There are a lot of techniques employed for purposes of game management on national forests: your land exchanges, land purchases, stock exclusion, life-history research on a given area, continuous taking of censuses, and that sort of thing. Can you

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*John H. Sieker, "Recreation Policy and Administration in the U. S. Forest Service," and Lloyd Swift, "Wildlife Policy and Administration in the U. S. Forest Service." Typed transcripts of tape-recorded interviews by Amelia Roberts Fry, University of California Bancroft Library Regional Oral History Office (Berkeley, 1968), p. x.

comment about some of these techniques that are used and are applicable in game management planning?

JHS: I don't know that I can make much in the way of constructive comments on the techniques. The biologists have developed new techniques for taking the wildlife census over the years. I think I mentioned earlier the first game census we made on the Pisgah National Forest where we had a whole CCC camp surround the area and then drove the deer out and counted them as they went through. It was a pretty costly method of doing that job and can't be used when you don't have a large labor supply like that available. Biologists have developed new systems of taking the census. The number of animal droppings on a given area is one method. There are other techniques, I'm sure, that I'm not aware of. They're better techniques than we've had before. If properly used, I'm sure they give good results.

Some of the techniques in evaluating wildlife habitat have to do with the amount of browsing on various plants at different times of the year. Foresters have made these studies because they deal with the habitat. Our experiment station has made studies of plant utilization by deer and of the impact of animal use on habitat, some of them carried on in collaboration with the state game departments. To both managers of habitat and managers of herds, the trend of wildlife food plants is important.

ERM: Do you think there has been perhaps too much emphasis upon game animals--that is, the favorite of the hunter--over other animals?

JHS: Yes, I think there probably has been too much emphasis on game rather than upon a balanced wildlife population. I believe that the new concern with ecology and environment has been propelling us toward a consideration of a more balanced wildlife population in which we are concerned with coyotes as well as deer.

ERM: Do you think that's a good thing?

JHS: I think it's a good thing. You know, we really ought to seek to have inventories of all of the wildlife. We need information as to how many deer, how many rabbits, how many coyote, how many mice ought to be supported in a given forest type of a given age class, and on different soil types. This is thinking way ahead because we don't have the knowledge now on things like that. If we had this information, it would help us to do an even better job of multiple-use management.

ERM: At least some pilot studies that would provide some meaningful data, although they might be expensive to do.

JHS: Oh, yes.

ERM: Taking a nose count on field mice and rabbits isn't going to be done for peanuts, is it?

JHS: No, such inventories will cost money, but I believe a practical method on a sampling basis can be developed. We do need more inventory for all resources in order to be able to improve our multiple-use management practices.

ERM: Are the research scientists in this field pressing hard enough, do you think, for support to do those things in the Forest Service?

JHS: I think they are, certainly at the ground level. But the Bureau of the Budget, with their personnel ceilings and lid on appropriation requests, stifles progress toward good management.

ERM: Logging does have an effect on wildlife in different areas. I know it's not always the same from site to site. But what would you say generally about clear cutting as compared with selective cutting as an impact on wildlife and game management? Does clear cutting make for an increase in the deer population, generally speaking, and does it make for a decrease in nesting animals or birds, for example?

JHS: Clear cutting results in an increase in the amount of brush on the ground which provides browse for deer. So often as you drive through the forests and go past some of these clear cuts early in the morning or at twilight you'll see the deer all around the edges. Small clear cuts provide edge between clearing and timber as well as more food supply, and this is conducive to supporting larger deer populations. Now, when you talk about nesting areas, clear cutting the trees does not leave anything for the birds to nest in. We require the contractor to fell all snags because snags are a very serious fire hazard.

So there aren't any homes left there for birds that want to nest in the trees. The amount of area that is clear cut at any one time is relatively small in relation to the total. If we were on a hundred-year rotation, at any one time we would have one-one hundredth of the total area in open, clear-cut condition. This is just a theoretical illustration. You can see that there are still

plenty of trees for nesting areas in the area surrounding the clear cut. I don't think that the clear-cutting program properly carried out has any real adverse effect on the nesting opportunity for birds.

Forest Roads

ERM: I'm sure you've been involved over the years in many sharp controversies between the Forest Service and the Bureau of Public Roads.

JHS: [Laughter.]

ERM: Controversies over the location of highways in the national forests, especially where there have been conflicts involving questions of the location of the highway as it may be affecting streams, wildlife, and fish. Can you single out one or two such conflicts that you recall most vividly?

JHS: Oh, we've had real good cooperation, I'll have to say that, here in the Northwest with the Bureau of Public Roads. Particularly one of the more recent directors--he's retired now--is a multiple-use-minded man. I think that as a result there haven't been any real sharp conflicts. Sure, we have had differences. One of them took place on the Rogue River. However, we were able to get the bureau to agree with the location changes that we felt should be made. They made the original survey there. The changes that we requested were to protect the scenery and the river, and they were glad to make them.

ERM: Do you feel that highway or public roads people have been unjustly accused on this score?

JHS: I suppose that like any organization they need to have some criticism to keep them healthy. All of us do. But I don't recall any serious complaints about the bureau with respect to our forest highways. In the Northwest the Forest Service has been building most of the forest-development roads and locating them. The Bureau of Public Roads comes into the picture in the construction of forest highways, that is, roads formally classed as forest highways and on the forest highway system.

We had problems on the North Umpqua road, but they weren't insurmountable problems. The bureau located and built that road. This was a very difficult location job because the California Oregon Power Company had an extensive power development there. This development included flumes which carried the water from collecting reservoirs to power houses. These had to be crossed. There were power lines that affected scenery along the roads. We were concerned about the beauty of the North Umpqua drainage and with protecting this beauty. We also needed the road for protection and resource development.

ERM: You don't recall any flaming controversies, in other words?

JHS: Baird French, the director at the time, is a very fine man. I've had lots of contact with him, both during and since I've retired. He is retired, also. He's a broad-gauged individual and well aware of the importance of scenery and recreation. We had a mild difference about putting the North Cascades road on the forest highway system and to program money for it. The Bureau of Public Roads, the State Highway Department, and the Forest Service are all involved in such decisions. Baird didn't think that we ought to put this road in the system and program money for it because there were so many other demands for these funds. He was willing to have it on the forest highway system, but he didn't think we ought to program money on it right away. So we had a meeting in Olympia to discuss the matter. It came to a vote, and it was two to one, the Forest Service and the state against the Bureau of Public Roads.

ERM: Do you remember what his objections were?

JHS: Well, he felt that there were a lot of demands on the amount of money we had, and we shouldn't start a new project that would take millions to complete at this present time. It wasn't that he didn't think there should be a road up there, but he didn't think it was timely to put the money on it.

ERM: Was there any strong opposition from preservationist groups along that score?

JHS: No, none at that time. I don't know what there would be today; I often think about that and wonder if we would have ever built it today.

Range Management

ERM: Let's talk a little bit about grazing. That's a use of the forest that's had a long history, of course, out here in the West, Herb. Especially in the early days overgrazing of the national forest was really one of the serious problems, was it not?

JHS: Yes, it was. In the late eighteen hundreds and the early nineteen hundreds there were millions of sheep grazed along the Cascades in Washington and Oregon. You see references in some publications to dust clouds that people saw when they went up into that country. The evidence is on the ground today in the form of depleted meadows. Sheep grazing is now almost a thing of the past. There are only a few bands of sheep grazing under permit on national forests on this region. I don't know how many, but there are very, very few. There are none of them on the Mount Hood, and many forests have no sheep at all grazing now. These ranges are coming back, but it's a slow process because they were heavily overused for a period of years.

ERM: Of all the uses of the forest is this one the most difficult to control, or is it no longer difficult to control?

JHS: I don't think it's difficult to control any longer. All of the stock is under permit, and the permits are controlled. The permits allow the stock to go on a specific range for a limited length of time. The dates are specified in the range management plans. Adjustments can be made in that date of going on the range and coming off the range by the ranger to meet changing weather conditions. In some places a type of pasture grazing is required. The pastures are fenced, and the animals rotated from one pasture to another. Grazing in this manner avoids overuse and provides rest periods or recovery periods for the plants.

ERM: Did you ever, as a ranger or forest supervisor, encounter serious problems with cattle or sheepmen concerning overgrazing on the land under your control?

JHS: No, I didn't. Of course, you've got to remember that I was a ranger in Pennsylvania, where we didn't have any grazing, and supervisor down in the southern Appalachians, where we did have some grazing, but it was a different type of grazing than we have here. So I never really had any problems of the kind you mentioned with the stockmen in my ranger and supervisor days.

ERM: Did you later encounter any serious problems along this line as a regional director?

JHS: We had some problems in Region 8 with hogs in Mississippi and Louisiana. The hogs, however, were just hogs owned by some of the local farmers. There were no large bands of hogs. At that time hog grazing was not really under any sort of control. Farmers were not required to have permits for hog grazing. In Mississippi some of our plantations were fenced to keep the hogs out. Grazing inside the fence was not permitted. Longleaf pine plantations in some areas would not survive without this protection. There was some cattle grazing in the forests in Arkansas. There it was a common practice of everybody to let stock graze on any unfenced area. No permits were required on national forests.

We began to think about getting this stock under permit about the time I left the South, and I understand that all stock on the national forests is now under permit. I think that's a good step forward, not that there was any great amount of cattle or stock damage to our forest areas, but it just was a use that needed to be put under some semblance of control and management. The worst effect was the trampling of the soil by the stock.

Incidentally, I had an interesting illustration of trampling effect. I had a group of bankers on a trip through the forest. We were looking at the Ouachita National Forest. We stopped in an area where there had been stock grazing. Across the road was a plantation about twenty years old that had had no stock. A metal ring was driven into the ground where the soil had been trampled by the stock. A measured quantity of water was poured into that ring, and the time required for the water to go into the ground was measured. It took around seven minutes for the water to percolate into that soil. Then the test was repeated in the ungrazed plantation. The plantation was so dense there wasn't any forage on the ground. The water went into the ground in about two and a half minutes.

I saw a cedar tree on the edge of the plantation and had been reading about the great value of cedar as a soil builder. We put the ring in the ground under the cedar, and the same measured quantity of water went into the ground in forty-five seconds. What had happened was that under cedar trees the leaf litter has a high-base exchange rate, and it creates a habitat that's suitable for earthworms and burrowing animals of various kinds. There were many openings in the soil, and the water went quickly into them.

ERM: Did you run into more serious range problems when you moved out to the West?

JHS: In the West there is an entirely different set of range problems. I would say, when I got here in 1951, the Forest Service was well on the way to getting the stocking in balance with the food supply. We weren't entirely at this point because there were problems and still are in eastern Oregon and Washington. Much of our problem areas are the result of past grazing.

Mostly the stocking is pretty well in balance, and we have wide acceptance of the deferred rotation system of grazing. We are really getting down to more of a pasture type of grazing for cattle. When I first came to the region there were quite a few bands of sheep on the national forests. Now sheep have almost disappeared. We're getting away from sheep grazing on public range. There are still some poor vegetative cover on some of the mountain meadows. But by and large we've made some real progress in this region in getting on top of the grazing problems.

ERM: Do you see that there is any parallel between the historical diminution of grazing as a factor on the national forests and the current trend that seems to be pointing in the direction of perhaps a diminution of the commercial timber cutting on national forests?

JHS: I don't believe there's any parallel there.

ERM: You don't. Why?

JHS: The reason for the reduction in the range stockings was the fact that range plants had been overgrazed in the past. There hadn't been any control of it before the national forests were formed, and it takes a long time to change these past practices. Also, we had to learn more about the problems. In the case of timber, the public forests have not been overcut in the past. Some of the recreationists might say we've been harvesting too much, but we have not been exceeding our allowable cuts based on our sustained-yield program.

Competition between Wildlife and Livestock

ERM: Is there any real problem of competition for food on the national forests between tamed livestock and wildlife?

JHS: There have been areas of competition. The stockmen have always been concerned about wildlife, especially when there were cuts to be absorbed by them. In that event they say, "Well, if you're going to cut us, you ought to reduce the number of wildlife on the range, the number of deer."

ERM: Wasn't it particularly true back in the forties and fifties when the Forest Service sought to increase drastically the size of wildlife herds and at the same time had to cut back the range for grazing?

JHS: I don't know that the Forest Service actually has set out an objective to greatly increase wildlife herds in this region, but wildlife herds have increased as a result of increased food supply and improved habitat resulting from good management and protection afforded by state game protectors. This has resulted in the game taking a share of the grass and the browse in various areas.

When the range management plans were prepared, it was evident that the range was trending downward as evidenced by the erosion and the reduction in good forage plants on the range. The stockmen have recognized the need for some reduction in domestic stock, but they also felt that there ought to be reduction on the wildlife population, also. They had a point. But I haven't heard much about this imbalance in recent years. Probably the stocking of both domestic stock and wildlife are getting more in balance.

ERM: To what extent has the growth of the practice of feeding cattle in feeder lots affected this drain on the public lands for grazing?

JHS: I don't believe I can answer that question. I think that most of the Oregon range stock has always gone through feed lots to fatten them.

Watershed Control

ERM: Moving on to another land management problem. What problems with flooding have you encountered in the regions in which you've been stationed? What measures were taken to control streamflow and runoff?

JHS: We've had some problems with flooding, all right, in this region. The army Corps of Engineers's program for the Willamette and Columbia

rivers, in which they have now constructed a sizable number of reservoirs to control floods, has been very helpful. But we still have situations where the proper combination of meteorological conditions can lead to damaging floods. The 1964 flood was a pretty good illustration of it. This occurred in the latter part of December. In early December we had a very severe cold spell before there was much snow on the ground, and much of the ground froze. Then we had heavy snow. We had four feet of snow in places as low as 4,000 feet and more above. Then the weather turned warm. We had, not only warm weather, but this freezing level went up around eleven thousand feet. There were heavy warm rains. The warm rain melted the snow. For example, at Government Camp there was four feet of snow one day, and the next day after a night of this warm rain there was practically nothing left. The streams just couldn't hold all the water, and they flooded at lower elevations.

They did a tremendous amount of damage. I think we had over twelve million dollars worth of damage done to the national forest road systems in the region, and the state highway department had many millions of dollars of damage, also. The water took out bridges on the road up to Government Camp and Zigzag, stopping all traffic. The Clackamas River Road was washed completely away in places. There were many soil slippages.

This combination of meteorological conditions does not occur every year, but more localized flood damage does happen almost every year. In 1964 Mount Hood suffered the most, but there was damage over much of Oregon and Washington. Most of the state highways crossing the Cascades in Oregon were blocked by washouts.

ERM: Is there any defense against such an unusual climatic cause of floods?

JHS: I don't think there's any defense against them when you get a set of circumstances that brings all that water down in a short time.

ERM: On deep-frozen ground.

JHS: On deep-frozen ground.

ERM: In other words, there are certain acts of nature that are very difficult to defend against.

JHS: Yes. You can take some comfort in the fact that weather experts say it was one of these hundred-year floods, so hopefully it won't

happen for another hundred years. But, on the other hand, it could happen next year. That would be the year that it happens in this hundred years.

ERM: But in the eyes of the general public, nature doesn't always bear the blame for this. Isn't that true?

JHS: I suppose that's true, although I didn't hear much complaint that this took place because of clear cutting or because of timber cutting. I think everyone was very overwhelmed because this started above Zigzag, where there isn't much cutting. There's some, but there's more area that's been burned in past fires. This tremendous flooding took place close to the headwaters and all the way downstream.

ERM: The Geological Survey was in the Department of Interior and had the job of certifying that the lands the Forest Service wished to acquire were needed to round out the watershed of an area. In later years, some Forest Service men, particularly [Edward] Kotok, have stated that strife appeared between the engineers and the foresters as to the effects of forest cover on runoff and erosion, and the Geological Survey appeared to support the engineers against the foresters.* Can you comment upon that?

JHS: I don't believe I have enough facts to make any statement on that. I heard, of course, of this conflict between the engineers and the foresters over many years. The engineers tended to place reliance for control of water on structures and ignore the effects of the part that vegetation played in streamflow control. They both had a point, but I think the engineers didn't give vegetation enough consideration. This is true of the army engineers. The army engineers's solution to things over the years has been structures, and it's only in recent years that they have realized the interrelationship that does exist between vegetation and water.

Some of the studies that the Forest Service has made have helped in this respect. The Forest Service at the Fraser Experimental Forest in Colorado carried on studies of the effect of lodgepole pine in intercepting snow and what that effect might be on streamflow. I believe that in the reports on that they indicated that this might affect the amount of water to run off from there by as much as 25 percent.

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*Edward Kotok, tape-recorded interview in 1963 by Amelia Roberts Fry, University of California Bancroft Library Regional Oral History Office, Berkeley. In Process.

This, of course, is just a study made in just one area, but I think that there's no question today that the vegetation and the management that's given to an area does affect streamflow.

I believe that one of the early experiments of the Forest Service was quite helpful in providing information with which to convince the engineers. This was the experiment on the Coweeta Experimental Forest in western North Carolina. This is on the Nantahala National Forest and was started in 1932. I remember it because I took Charley Hursh, the man responsible for initiating these studies, to this area when he was looking for an area in which to establish a watershed study area. I showed him some other areas, also, but this was one that was selected.

A Civilian Conservation Corps camp installed the first facilities. It was an area of about 5,000 acres. All of the streams could be completely controlled by the construction of weirs. Also constructed were water wells and rain gauges on all of the twenty-eight separate watersheds. For each watershed, a complete water account was possible.

After about seven years of calibration, various treatments were started. On one area six head of stock were grazed on 145 acres of mountain watershed. Within about eight weeks the infiltration rate for rainfall had been reduced to one-eleventh of its former rate. This use was continued over a period of years. The stream hydrograph after rains would show higher flows than before, and then in dry periods minimum flows would be lower than before.

There were also some growth plots in which the growth of the yellow poplar, one of the fine timber trees in that area, was measured. Over a period of years the growth of the yellow poplar on grazed areas was 22 percent less than where the stock was kept out. A number of other studies were carried on, including one in which all the trees on thirty-three acres were cut. The streamflow increased 65 percent. But it all stayed within its banks, and water quality remained high.

I think the results at Coweeta were very useful in getting the engineers a little better educated, a little better tuned in on land management. I don't mean that it did this all at once. I think the educational process is a slow one, but over the years, I believe, the engineers have become more aware of land management as a factor in streamflow.

ERM: Have you ever seen floods do any good, or are they always bad?

JHS: [Laughter]. Well, floods sometimes will leave some good soil on the lower end of the drainage where they spread out. Maybe that's useful from the standpoint of producing crops there, but this is at the expense of the area from which the soil is taken. I can't think of a flood that really does good.

I was in Louisiana in 1927 during the 1927 flood of the Mississippi. I remember riding on a train from Urania, Louisiana, to Monroe. We went through an area of about fifteen miles where you didn't see anything but water and houses sticking up above it. Even the train tracks, which were up on an embankment, were covered with about a foot and a half of water. I thought that that water might drown some of the snakes in the country, and maybe that was a good thing.

The snakes may have gotten out. In one place one wheel of the locomotive tender got off the track. The train stopped immediately. A section crew from nearby worked in this water with their pants rolled up above their knees trying to get the train back on the track. We were there a couple of hours, anyway. A couple of fellows from the National Guard, who had been on rescue duty in southern Louisiana, were on the train and they had pistols with them. While we were stopped they did some target practice. They said they were shooting at snakes trying to swim from the brush to get aboard the train. At least that's the story they told.

An old colored lady in the car heard them shooting, and she said, "What's those folks shooting at?" A man told her they were shooting at snakes trying to get on board the train, and she let out a shriek and said, "You don't suppose there's snakes aboard already, do you?" And he said, "Well, I wouldn't be surprised," but he says, "that's not what's worrying me. What I'm worried about is what we'll do when the alligators start coming in!"

ERM: Now, 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 values but tends rather to increase them."* Would you agree with that evaluation?

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*American Forestry Association, "Forest Resource Appraisal," American Forestry Association Papers, Box F 13, Forest History Society, Santa Cruz, California.

JHS: This is one of those generalizations that isn't correct in all cases. I really don't like to make generalizations of this sort. If a good job is done of managing the timber crop and harvesting it with proper regard for the kind of logging equipment used and if the job is done with regard for the kind of soil and the slope, the watershed will not be damaged nor the capacity of the soil to absorb moisture. A new forest will rapidly emerge.

On the other hand, when trees are cut from an area, it's the same thing as removing pumps. Each tree pumps water out of the ground and transpires it into the air. When the trees are removed pumps are no longer available. The amount of water in the soil is increased. Now, if the soil tends to be unstable, particularly if it's flooded, then soil slippage may occur with damage resulting.

On the other hand, if it isn't that kind of soil, the amount of water in the soil reservoir is increased. That's good because the soil reservoir then furnishes the water that will supply the streams through springs during dry periods. So harvesting can be helpful, but also it can be harmful. It just depends on the circumstances surrounding the particular situation.

ERM: In other words, it does depend on with what reasonable care the job is done and how promptly restoration of new ground cover and forest plantings take place to provide fast-growing new pumps.

JHS: Yes. But it might be that if the soil and the slope in a particular place is of such a nature that an earth slide is likely, a special type of harvesting or logging will have to be adopted even at greater cost.

ERM: Is there such a thing as removing a stagnant, old forest and replacing it promptly by a thriving, new stand that will improve the watershed values of that land, or is that again one of those dangerous generalizations?

JHS: I think it's quite possible that the elimination of the old-growth forest and the replacement of it promptly with a thriving, new forest could be done without hurting the water situation. There would be immediately an increase in the amount of water in the ground. These big, old trees are transpiring a lot of moisture.

I have often wanted to have research people tell me how much water a Douglas-fir tree transpires in a day in August or some

particular day in the year. But it's pretty hard for them to give that kind of answer. Charley Hursh told me one time that an eight-inch oak tree in North Carolina would transpire fifty-five gallons of water in twenty-four hours in the growing season. Well, that's a lot of water for one eight-inch tree, and if you have a two-hundred-foot tree with all that leaf surface, the transpiration must be a tremendous amount.

ERM: Are you convinced that the data provided by research foresters in that regard is sufficiently sound to depend upon the statistics that they provide? Do they know enough about how to measure, for example, the daily transpiration?

JHS: Yes, they can measure the transpiration in laboratory conditions and have done it. The problem is interpolating this into a big tree growing out in the wild. It may be something that isn't particularly important. I was interested in it out of curiosity, but it seems to me that if we did have some knowledge of just the comparative amounts of water transpired by an old, big tree and a young, thrifty-growing tree, we might have something that would help to guide us in knowing more specifically what the effect of harvesting would be on water supplies.

Recreation in the 1930s and 1940s

ERM: What do you remember of the attitude of rangers during the thirties and forties toward recreation on the national forests?

JHS: I believe that rangers in that period were very much interested in recreation. They would like to have built more campgrounds. But there were quite a few campgrounds built in the region that I was in at that time, Region 8. This project ranked high in the list of projects on each CCC camp's work program, and we got a lot of those built. The rangers were interested in getting it done because they had had these areas that were partly developed and they hadn't had the money before that to really do the kind of a job they wanted. The CCC gave them the opportunity.

Also, at that time we began to recruit men who had some little background in recreational development and began to improve the quality of our improvements. So I would say that the rangers

were delighted to have this opportunity. I think that was true here in Region 6, also, because I have looked at some of the worksheets for the CCC camps from this History of the Rogue River,* and in practically all of them recreational projects are important.

ERM: In an earlier oral history interview, Leon Kneipp stated that: "The first recreational campgrounds constructed in the national forests were not constructed to accommodate or foster recreation so much as they were to keep campers from interfering with the regular business of the Forest Service and to keep the people away from the watering holes of the animals and the areas of logging and therefore to avoid conflicts between grazers and recreationists, sawmill men and recreationists, etc."** Do you recall that this was indeed the case, or did you see it from a different point of view than Kneipp?

JHS: I think that what Lee says was true in the early days of the service, from 1905 to 1930. In the area I was in, the idea was prevalent that it was desirable from a protection standpoint to have the recreationists concentrated where you would have some knowledge of where they were in event smokes were sighted.

But this was used, as I viewed it then, primarily as a means to try to get money for recreation. We could get money for fire control, and if we could justify these campgrounds on the basis of a protection measure, it helped to get some funds. I think that about the time I started in the Forest Service the interest was beginning to change to one of developing recreational resources. Certainly this was evident in the early thirties when the Civilian Conservation Corps camps were established.

ERM: Did any of the rangers in your time or a little earlier think of the recreationist as a damn nuisance with which they had to put up?

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*U.S., Department of Agriculture, Forest Service, History of the Rogue River National Forest, 2 vols. [Oregon: Rogue River National Forest, 1965].

**Leon F. Kneipp, tape-recorded interview in 1964 by Amelia Roberts Fry, University of California Bancroft Library Regional Oral History Office, Berkeley. In process.

JHS: I don't believe so. I don't ever recall encountering that attitude on the part of our rangers. It's entirely possible that some of the older rangers had some feelings of that sort. But they were never expressed where I was involved, anyway, and I just don't think many had that view. I remember Ranger[R.C.] Nicholson on the Nantahala National Forest. He was an old-time ranger, and he was deeply interested in the development of campgrounds.

ERM: Was the Forest Service slow in developing a recreational program? Did such hesitancy, if it existed, contribute to territorial losses to the Park Service?

JHS: I don't think so. I don't think that the Forest Service was slow. I suppose you could say they should have endeavored to get more money for this recreation development earlier than they did. When the Civilian Conservation Corps was established in 1933, the opportunity opened up to do this work, and I think the Forest Service was quick to undertake it. I'll venture to say that there was more recreational development in the national forests during the Civilian Conservation Corps days than in the national parks. This, of course, is just observation without any proof.

ERM: Do you think that the Forest Service may have another opportunity of that kind at the present time, with perhaps a re-establishment on a large scale of conservation corps groups? Given the great numbers of unemployed young people in the country and the disaffection that so many are expressing with the system, isn't this a prime time to capitalize on this situation and do some good with it?

JHS: Perhaps it is. I noticed that Senator[Henry M.] Jackson is talking strongly in favor of something of this nature. I feel myself that what we ought to have is a permanent Civilian Conservation Corps. If a corps is started just as an emergency measure to meet an unemployment situation then when the employment improves this program is terminated. I think we should have a CCC as a continuing program that can be expanded or contracted to meet some of the economic situations the country faces. But I would like to see it as a continuing thing rather than just temporary.

ERM: Did the development of recreation in the Forest Service begin as a conscious effort to get the support of the aesthetic conservation crowd, possibly as a countermove to press for the transfer of the national parks to the Department of Agriculture? In other words, was the threat of transfer of Forest Service land into national parks a factor in making the Forest Service move in the direction of recreational development?

JHS: I doubt if it was a great factor. I'm sure that occasionally it was thought of and, perhaps, used in pushing specific projects in specific places. But, I think, by and large the Forest Service recognized that they were dealing with land that had recreational potential, and under a multiple-use program this could not be ignored.

ERM: Looking back over some forty years of experience, how would you characterize the development of the Forest Service's interest in the recreational area, taking the decades of the thirties, forties, fifties, and sixties?

JHS: [Laughter.] I can take a shot at it, and it would be a characterization that wouldn't be agreed to by everyone. I think of recreation as entering a developmental period with the advent of the Civilian Conservation Corps, so you would call the thirties then a period of development.

ERM: The automobile, too, don't you think?

JHS: That's right, and roads. This was another factor that was made possible by the Civilian Conservation Corps, the development of a road system on national forests, which not only provided for the protection of the area from fire but also provided access for recreationists to get into some of the beauty spots that were made available by these roads.

The forties were disturbed by the war. Recreation activities came to a grinding halt at the start of the war. First of all, there was the lack of manpower. Many of the professional men in the Forest Service went into the armed forces, and others were used on various types of war work. People didn't have the gasoline to get out on the forests in those days. The development and use came to a halt. Even the maintenance went down to nothing, and this created a backlog of maintenance after the war. This created a real problem for the Forest Service. So I don't know how to characterize the forties other than one of retrogression because of the war.

ERM: How fast did the Forest Service move to catch up after the war?

JHS: Well, after the war they tried hard to get some money for catching up on the maintenance job. There was a big backlog of work needed because the improvements had gone downhill. They needed to be rehabilitated. We didn't have any Civilian Conservation Corps then, but primarily it was the lack of funds that made it impossible to hire

people to do the job.

One of the things that we were trying to do was to fix up the improvements so they would be safe. We took money from any source we could find in order to do some of this and still were way behind. Floors in some of our toilets, for example, in the campgrounds were beginning to rot. I can remember, [laughter], early in the fifties, Frank Folsom, chief of our Division of Recreational Lands, had to try to pacify some lady wearing a fur coat who fell through the floor of a toilet on the Mount Hood National Forest. Frank came in one day chuckling and said, "I don't think there's anything madder than a woman who has fallen through the floor of one of our toilets in a fur coat."

ERM: [Laughter.]

JHS: I told him that I didn't blame her. I would be mad, too. Anyway, we had this rehabilitation problem, and it was a serious one. Finally, early in the fifties we got an appropriation for the Forest Service as a whole of a million dollars or something like that to catch up on some of this maintenance work. This wasn't nearly enough to do the job, but it gave us a start. From then on we kept pressing for more and more money, and the amount of money was increased. But we still haven't been able to develop new recreational areas or new campgrounds to serve the growing number of people using them. We haven't been able to catch up with the increased use.

During the fifties the recreational use of the national forests of this region grew at a rate of right around 14 percent a year, which, you see, would mean in seven years the doubling of the recreational impact and use of the national forest campgrounds. So we have made some progress, but I would suspect that we're still behind and that we still could use more money to develop new campgrounds and to improve the standards on old campgrounds.

ERM: What about the sixties?

JHS: The decade of the sixties has witnessed some substantial increases in the interest in recreation on the national forests, and, as a result, we have received some substantial increases in funds.

ERM: Has our involvement in two additional wars--Korea and now Viet Nam--had its impact on this?

JHS: I'm sure that these two wars and the money needed for them have had a very serious effect on, not only money for recreation, but on all other uses of the forest except timber. One of the things that helped in the sixties was that the Forest Service came out with a ten-year program for the national forests. I forget when that was completed. It was the late fifties, I guess. Anyway, it outlined a program to meet the needs for recreation and water development as well as all other resources.

This was presented to Congress and received very favorably. But we never have been able to get the money necessary to keep up with the needs as envisioned in this ten-year program. Consequently, we have fallen behind in developing the campgrounds needed to meet the increased use.

I think the Viet Nam War has been a serious obstacle. Now, maybe I'm prejudiced against the war in the first place. But, anyway, we had a specific program for the sixties, a long-range program for recreation, wildlife, water, and all the other multiple uses. The needs were very definitely forecasted and pinpointed. Estimates were made of the monetary needs, and we were ready to go. But we haven't been able to meet the program, and it's because of the lack of funds. I'm sure that those two wars prevented us from getting the funds we should have gotten.

ERM: We've been very careful about generalizations in this interview.

JHS: Yes [laughter].

ERM: And you and I are both a bit doubtful of some of the generalizations that have been quoted in my questions. Do you think that it's safe to make a generalization that our nation's involvement in war usually foretells a decline in serious application of multiple use?

JHS: [Laughter.] Well, I suspect that this usually happens all right. I suspect that when you get involved in senseless conflict and war, which takes a tremendous amount of resources both in men and in money, that something has to give, and multiple use, the development of resources, is looked upon as something that can be deferred till next year.

ERM: The old "guns or butter" idea.

JHS: But you can't have both, notwithstanding Mr. [Lyndon B.] Johnson.

ERM: Who do you see as being the men who are most important in the development of recreation and wilderness programs in the Forest Service?

JHS: The first to come to mind is Aldo Leopold and then Bob Marshall. Both men had a strong impact on recreational development, particularly in wilderness recreation. Then, I think, I would identify [F. A.] Silcox as the one who was instrumental in supporting this kind of development. Lyle Watts gave it a great deal of emphasis. When you get out on the ground, I think, we had men like Fred Cleator in this region who left his mark on recreational developments in the region. I think he was helpful in developing an interest in helping to educate some of our personnel to recreation's place in the multiple-use program.

I think of Winton Reinsmith in Region 8, who had quite an impact on the quality of the recreational development there. I think that Phil Heaton in this region, who is still chief, had a strong influence. I'm sure you can't overlook mentioning John Sieker, who, at the chief's level, gave a great deal of leadership to the development of the recreational survey and long-range program in the late fifties and early sixties.* I'm sure there are others.

ERM: What about [Arthur] Carhart? Do you think he played a role?

JHS: Well, if he did, I'm not really familiar enough with it to comment on it. I think of Carhart as being associated with that record center there at Denver, and he may have had some effect in the early days, but I was never acquainted with him or in an area where he was working in those days.

ERM: Is it true that California was a leader in the development of recreation?

JHS: Do you mean the California Region or the state of California?

ERM: Both, the Forest Service in California and the state of California.

JHS: I'm sure they had personnel that were instrumental in developing a fine program for California, but I don't recall California's influence being important so far as other regions were concerned.

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*John H. Sieker, "Recreation Policy and Administration in the U.S. Forest Service," typed transcript of tape-recorded interview by Amelia Roberts Fry, University of California Bancroft Library Regional Oral History Office (Berkeley, 1968).

ERM: Was the development of a formalized recreation program in the Forest Service in any way the result of problems in fire protection?

JHS: Well, in the early days, as I mentioned before, I think that recreation or the development of campgrounds, which was the recreational use predominantly thought of in those days, was viewed as a part of the protection program as well as making available the attractive areas in the national forests for the enjoyment of visitors.

ERM: And steering people into areas where they could be controlled.

JHS: Yes, where they would be concentrated and where such structures as fireplaces could be built in places where fires would be safe.

ERM: Do winter sports cause particular problems in multiple-use planning and operation?

JHS: Winter sports require consideration of such things as suitability of terrain, access, snow removal, avalanche hazard, service structure, and sanitation. Now, these all may have a multiple-use impact. The development of winter sports areas does have quite an impact on multiple-use management.

For example, the Forest Service has recently had a proposal to develop a ski area on Mount Bailey on the Umpqua National Forest. This originated six or seven years ago now, because there was talk about it before I retired. The county was particularly interested in it. We asked that the county make an economic study to determine whether or not there was enough potential use at the moment to justify the investment of a million dollars or so in the development of an area. At that time there wasn't. The project was dropped, but now it's been revived, and I think there are plans in the works now for the development of such an area.

One of the problems that arises in connection with this is, Which side of the mountain should it be on? If it's on the east side of Mount Bailey, it's right above the Diamond Lake Recreational Area. What are the impacts going to be on that area? If it's on the other side of the mountain, it'll be away from there, but there's the problem of building a road. Also, if it was built on the east side of the mountain, the terrain is such that it would provide skiing mainly for experts. On the other side the terrain provides a variety of slopes for skiers of all skills. On the west side there is the problem of developing a road to serve as access to it. It would take around seven miles of road, which would have to be plowed in the wintertime.

All of these factors have to be assessed, and they have to be related to what the impact is on the other recreation and on soils. Can we build a road into the area without hitting some bad soil types, which will lead to erosion? Are there any other impacts? There may be some impacts on the harvesting program going on in that particular area. What are the interrelationships there? So a winter sports area does have many ramifications that may have an impact on many other uses or resources.

ERM: Given the growth in population and the tremendous growth in the interest in winter sports recreation, is there need for more winter sports facilities, including ski lifts, chalets, and one thing and another, on the national forests?

JHS: There may be as time passes the need for more winter sports facilities, but I think that there is need to be careful to see that there is enough use to justify the investment. Now, I know that ski areas are getting crowded, and the ski interest seems to be sustained. But is this growth going to continue? Are not people going to get unhappy about the crowds that flock to these areas for concentrated skiing?

I've often thought that we should have more cross-country skiing. This wouldn't concentrate people, and it would be a lot cheaper. On the other hand, there are some hazards involved. For example, avalanche areas must be marked and people kept out of those places.

Another factor that has to be taken into account is the increasing use of snowmobiles. Just how can snowmobiling be fitted into a recreational pattern to serve demands needs careful examination. For example, there have been instances where the unrestrained use of snowmobiles has had adverse effect on game herds, and the State Game Commission in Oregon has become concerned. So along with this new use comes a whole new set of circumstances that have to be analyzed and considered in the multiple-use program.

ERM: That's part of thinking through what seem to be obvious solutions, to try to anticipate some of their side effects.

JHS: This to me means that planning must be dynamic. Plans must be ever reshaped to meet changing conditions, or changing conditions will defeat the plans.

ERM: How does the Forest Service measure the value of land for recreational use? Does it give every use any kind of mathematical formula or statistical analysis?

JHS: I know of no mathematical formula for evaluating recreational uses. I think the evaluation has to be based on judgment. Now, there may have been some mathematical formulas developed of which I'm not aware. I would think that such formulas could only be guides to judgment.

ERM: Isn't this one of the bones that the preservationists chew upon a good deal, saying that, "Well, you know how to evaluate the land from the standpoint of timber and its worth, but how do you place a similar value on the land for aesthetic reasons or recreational reasons?" Is there any way of finding a formula that will provide some comparisons?

JHS: I think that the subject is being studied by research. On the other hand, I know of no recreationist who has suggested a good yardstick. What the Forest Service really does in evaluating these proposals for recreational use is to discuss them with people.

Just last week I attended a public meeting that was held in Medford, dealing with what should be the developmental program for the Sky Lakes Area, which is partly on the Rogue River National Forest and partly on the Winema National Forest just south of Crater Lake. The Forest Service was seeking to get the views of a great many people, and there were two general types of views presented there. Both groups felt the area should be used in an undeveloped status for recreation. Some favored making it a formal wilderness, and some favored managing it for what they call backcountry recreation without the development of roads. Meetings of this sort enable the Forest Service to assess the various points of view as an aid to a balanced judgment.

ERM: In 1959, Herb, you recommended to Chief Dick McArdle that Region 6's Division of Recreation and Land be divided into the Division of Recreation and a Division of Land Acquisitions and Rights-of-Way. Why did you make this recommendation, and what reaction did you get from the chief forester?

JHS: I made this recommendation because the load on this particular division was too heavy. We needed to give more leadership to the recreational program, and we also needed to move ahead with the land-exchange program. Also, there was a close tie between the

right-of-way program and timber, which was where the right-of-way work had been done previously. We needed to consider right-of-way needs more widely than just timber. We needed to have a right-of-way program that would serve recreational needs for access as well as all other uses. So it seemed to me that this organizational change was a step forward in strengthening our leadership for recreation and also for making a more effective right-of-way program to serve multiple use. This recommendation was approved, and the divisions were set up.

ERM: Do you remember Mac's response to it other than that it was approved?

JHS: I really can't remember this detail. Such things were not something that was just made without having previously been discussed with the functional directors in the chief's office and, when necessary, with the chief himself. There undoubtedly had been a good deal of verbal discussion of this move previously. In fact, it may have been something that was involved in a general integrating inspection which, in that case, would have already been discussed with the inspectors and, consequently, with the chief himself. In any event, I don't recollect any specific reaction from the chief other than the approval of this recommendation.

ERM: Does recreation in the multiple-use situation mean concentrated development of the land for recreation, or does it mean leaving the land basically as it is? That is, do you favor planned development and capital investment as ways to check environmental depletion?

JHS: Yes, I think that in our multiple-use planning we have to recognize the potentials of the land and how it can best be developed and protected from damage. Some land may be of such nature that good management would provide for no development. Much of it will have a potential for various types of recreation as well as harvest of resources. Winter sports require a development program, even cross-country skiing. So I think that land use and resource planning forms a basis for an investment program in forest development.

ERM: Well, I think the question is rather ill cast because obviously there is no pat answer to that question. It depends on the peculiar recreational need that you're trying to serve. If you're trying to serve a wilderness recreational need, that's one thing. If you're trying to serve a ski-lift situation, it's another. If you're trying to provide a camping ground situation, it's another. So I think it's a rather dumb question. Do you ever see that logging served any positive benefits to recreation? We always see the negative aspects.

JHS: Yes, in a number of ways. First of all, timber harvesting requires a transportation system. The road system may well serve recreational use as well as wildlife and timber harvest. Also, we have used the harvesting process to open up a vista along a highway. I remember one, particularly, on Highway 58 to Willamette Pass where a small clear cut revealed a beautiful view of Diamond Peak and the surrounding wilderness. A turnout on the highway permitted motorists to pull off the road and enjoy the scene.

ERM: In Region 6 the North Umpqua hydroelectric power development of the California-Oregon Power Company--now Pacific Power and Light--an extensive system of dams, was constructed. Was there any opposition to this from preservationists?

JHS: This was initiated before I came to the region, but I don't recall hearing of any strong opposition from any recreationists or environmentalists. This was an example where the Forest Service did try to do what they could to get some of the impact of that development taken care of to preserve the attractiveness of the scenery and to prevent erosion.

But we learned a great deal from this. In this case we did not have the Federal Power Commission's concern with land and scenery that exists today. The Federal Power Commission permitted this company to carry the water in flumes dug in the ground for long distances and then drop it through penstocks at powerhouses. The dams that impounded small reservoirs created quite a scar on the landscape in places. This canal system has had a heavy impact on the attractiveness of this area. You can see some of these flumes for many miles. The raw earth could be plainly visible. Later we required that the raw banks be revegetated. Much revegetation has been done. It was quite a struggle there for awhile to get things done.

The impact studies in that day dealt mainly with the relationship to existing Forest Service facilities. Adequate consideration was not given to scenery and soil nor would the Power Commission give any weight to such matters. Long flumes, such as on this project, most probably would not be considered appropriate today by either the Forest Service or Power Commission. The power line would have been located differently so it wouldn't be built along the North Umpqua Road.

This would have cost more money. The Power Commission was interested in a development which would be the most economical. The power company would do whatever the Power Commission required.

If they had to spend more money to develop some features different from the cheap ones that they selected, then they would want to pass the cost on to the consumer through their rate structure.

ERM: When was this development put in?

JHS: It was underway before I came here in 1951, so I suppose it started in the late forties.

ERM: Have any of the impounded waters in that project become good fishing grounds?

JHS: Yes. Lemolo Reservoir, which is the upper impoundment on the system, is supposed to be good fishing. There are campgrounds on it, and there is also a little resort there.

ERM: Have preservationists used this as an example of either good or bad impact on the land?

JHS: I can't recall at the moment any particular instance of this, although, I suppose, they may have. But the preservationists were not nearly as active at that time, and this never became a cause célèbre.

ERM: Have you ever been involved in any controversies between wildlife or recreation spokesmen and others who were responsible for dams and power installations, public or private?

JHS: Yes. I don't quite see the conflict as between the Forest Service, on the one hand, and the recreationists and power companies on the other. It's been more the other way.

For example, we had on the Gifford Pinchot National Forest one of the PUDs[Public Utility Districts] in Washington that sought a license to raise the dam at the outlet to Packwood Lake, which was inside the forest about six miles back from the end of the road. They weren't going to raise the level of the lake much, but they were going to take water in a pipeline from there to a penstock six or seven miles down.

We were quite apprehensive about this development. They wanted to use the same style of flume as the California-Oregon Power Company had used in Oregon, and we wouldn't agree to that. They finally agreed to bring water down in a pipe, but then there was the question of the road that was necessary. They needed an access road up to the point where they wanted to raise this dam. This was

a development that gave us a lot of concern and caused many arguments with the power company over its location.

The standards of its construction also gave us concern. The PUD wanted to build the road pretty wide. We wanted to keep it to a minimum width. We didn't question that they needed to have it. Then we wanted revegetation of the banks along this road. Although the penstock into the powerhouse, as I remember now, was outside the forest--and we really didn't have much to say about that--we hoped that they would revegetate. Actually, they didn't do it. But there were a number of things like that that caused controversy in the development of the project.

We didn't have the final approval on these projects. The Forest Service only recommends to the Power Commission. The commission makes the final decision. I think if I was doing it over again I would have recommended to the Power Commission that it not grant the license because it didn't seem to me, even at the time, that the amount of electricity that would be produced would be enough to justify all of the impact that this project would have on the scenery and the soil of the area. Anyway, we did approve its construction with the changes to protect the soil. Even if we did recommend against it at that time, I have doubts that the Power Commission would have paid much attention to our recommendation. I think they would have approved it anyway.

We've had a number of other cases. We were, of course, involved to a degree in the argument over a dam below Hells Canyon. We made a report on the impact that this development would have on the national forest land and its recreational values. Actually, that development, while it would destroy some of the type of recreational value that was there with the free-flowing stream, would also add recreation provided by a lake. It would have some adverse impact on the range for deer and elk and, also, on domestic grazing.

All these impacts were pointed out. These things could be handled by the company purchasing additional land elsewhere to make up for the land that was taken out of the deer range and the cattle range. The principal controversy here is between the environmentalists that wanted a free-flowing stream and those that wanted the power.

We have had numerous arguments with power companies in the location of their power lines, and this is a continuing matter. I think the power companies are becoming more and more aware now that they must think about the scenery, too, and try to minimize the impact.

ERM: By going underground with lines?

JHS: Not so much going underground at the moment because, as I understand it, the technology hasn't been developed to provide for underground transmission of high-powered voltage. But we finally got agreement with Bonneville and some of the private power companies to run their lines as far as possible on single corridors. In other words, maybe they could widen a power-line corridor to add another line rather than making a whole new corridor, which generally was what they sought. In this we were successful in keeping down the ground loss in rights-of-way and minimizing impact on the scenic features.

ERM: Have these rights-of-ways for power-line settings had a big impact on other uses of the forest? Clearly they have a detrimental effect as far as the aesthetics are concerned, but do they bring any benefits other than those which derive from carrying the electricity?

JHS: That's the principal benefit. I suppose you could say that they do provide more browse for the deer. Power lines do provide more edge for wildlife, but I don't think that's very important myself. I think principally they detract from the scenery. In some places Christmas trees can be grown under power lines. Power lines also provide variation in the forest type and age class beneficial to wildlife, particularly deer.

These minor advantages do not offset the adverse impact on scenery and on timber production. Ten or fifteen years ago now I remember asking our Division of Lands to determine the acreage under power lines on the national forests of Region 6. As I remember, the figures showed that there were about seventy thousand acres of national forest land under power lines in this region. These seventy thousand acres could be producing an average of five hundred board feet per acre per year, which means about three and a half million feet a year were lost to log and lumber production and the economic life of the area.

Wilderness Areas

ERM: Turning now to the history of wilderness and primitive areas. Do you recall your early attitude toward primitive areas? In other words,

what was your primitive period attitude toward primitive areas?

JHS: [Laughter.] I think that my early impression of the value of wilderness areas and primitive areas was quite favorable. It seemed to me that there were many advantages in setting aside some areas and maintaining them in a primitive condition, not only for use in the future by those who wanted wilderness recreation, but also these wilderness areas would serve as a bench mark to use in evaluating progress under management.

ERM: Do you think that was a view held by any substantial number of your contemporaries in the Forest Service at that time?

JHS: I think it was. I think that there were quite a few people that held that view. I suppose there were others that didn't. You have to remember my experiences in those days were limited to the eastern United States where we didn't have much undeveloped forest land. In fact, we didn't have wilderness areas in Region 8 until I recommended the inclusion in a wilderness category of the Linville Gorge area on the Pisgah National Forest. This was established as a wild area. I thought that such areas as these would have some real value, and I was in favor of setting some of them aside.

Later, as pressure for more and bigger wildernesses grew, it seemed to me that there was a limit as to how much should be so dedicated. The only question on wilderness, in my view, is one of where and how much. I think that we need wilderness, but I think it's a mistake to set up tremendously large areas in a primitive or wilderness status. Perhaps we need one or two of those, but to add acres just to get acres when we know that those acres will really never be used much does not make good sense. Such action does reduce the recreational opportunity for those that enjoy and have time for only the more accessible recreation. We need much of that kind of area, too.

ERM: Are you saying that primitive areas should be expanded, diminished, or remain as they are?

JHS: If we're talking about present day situations, I think that by and large we shouldn't add a great deal to existing wilderness areas. I think, for example, that it is a mistake to add another 100,000 acres to the Eagle Cap Wilderness in this region. The Eagle Cap Wilderness has about 220,000 acres in it now, and there is only one small part of it that is overused, and that's the Lakes Basin.

There are many other parts of it today that are underused. The addition of 100,000 acres in a valley that has no lakes in it will not relieve pressure on the Lakes Basin. This valley proposed for addition is just a nice, attractive, pleasant, stream valley with a mature forest. Some of the upper end of this valley might well be added to the Eagle Cap Wilderness, but the whole 100,000 acres is not needed, and the addition of it would prevent a balanced recreational program.

I don't think that wilderness users are going to use the lower Minam Valley more than they do now. I think the automobile recreationist should have a chance to see the area and fish and camp along the lower Minam River and on its tributary, the Little Minam.

ERM: Now here's a question to test your U.S. Forest Service chauvinism.

JHS: [Laughter.]

ERM: Is wilderness, in your estimation, safer in a national park or in a Forest Service wilderness reserve?

JHS: As far as safety is concerned, I think it's probably safe under either administration. I know that the Forest Service is experienced in the management of wilderness, having managed wilderness as such for a number of years. The Park Service has preserved some wilderness, but I am not sure how they have developed it for wilderness use. I wouldn't say that there shouldn't be wilderness in parks. In my judgment, however, the wilderness of the North Cascades would have been protected and managed much better by leaving what is now the North Cascades National Park in the national forest.

The Park Service is setting up some of it as wilderness, but the Forest Service planned for wilderness the whole upper end of Ross Lake and also some other areas that are not in wilderness under the Park Service plans. These areas are now classified as recreation areas. All of that would have been wilderness under the Forest Service proposal. It was already in the primitive area we had been managing for years as wilderness.

I don't want to criticize because the legislation actually defined these recreation areas. The Park Service is a fine organization, and I have great respect for many of their people that I've met. I do think that their concern is and must be to maintain areas in a

natural condition. That's fine. This could be done on some areas and a fine wilderness maintained. But one of the things that is needed in wilderness is hunting in order to maintain the game herds in balance, and you can't hunt in the national parks.

ERM: Well, I think that's a most modest reply, Herb, to that loaded question.

JHS: [Laughter.]

ERM: I admire your modesty [laughter] . Do you believe that the Park Service practices multiple use in any way at all?

JHS: Now, that depends on how multiple use is defined. In the definition that I have of multiple use, a conscious effort is required to utilize the resources in harmony with each other. I don't think that the law under which the Park Service operates permits that. The law says you'll maintain things in a natural condition. Natural wild areas are not managed, and multiple use requires planning and management. So from the standpoint of this definition of multiple use I'd say they aren't managing their lands for multiple use, and they shouldn't under the laws governing their operation.

ERM: One of the distinctions I think that you're making is that the Forest Service would apply multiple-use principles even in a wilderness area. They would permit hunting, for example.

JHS: Yes. Again I refer to my explanation of multiple-use planning. We plan for a large area. That area may have wilderness as one of the elements of land management projected for a portion of it. So the development program for the rest of the area will be carried on in harmony with the wilderness unit.

ERM: Would you say, then, that the Park Service practices single-use management?

JHS: Oh, I think you get into lots of arguments that are unnecessary and don't solve anything by saying that the Park Service is involved in single-use management. They're involved in maintaining an area in a natural state. I think the law says that national parks should be maintained in a natural state for the benefit of the people so they have the rather difficult task of providing for recreation and maintaining an area in a natural condition. When you get large crowds, it's difficult to do that.

On many park areas I'm sure there's more than one use. There is recreation. Soil is protected during road construction to avoid erosion. Water quality in the streams and lakes is maintained. So there is often more than one element or use considered in the national parks. Single use is a flag waved by some people to belittle the parks. It's a red flag, which I do not think is entirely accurate, and I don't think it's necessary.

ERM: Herb, forgive me for using it, but I'm going to do it anyway, being an ornery type of historian.

JHS: [Laughter.]

ERM: Kenneth Pomeroy, the forester of the American Forestry Association, opposed the wilderness bill in the late 1950s on the grounds that it was a single-use proposal. Was it a single-use proposal, and what was your position at the time on this bill?

JHS: I'm going to try to skirt around this question of single use. I, at the time, felt that the wilderness act was unnecessary. In the first place, it seemed to me that a wilderness act would freeze the classification of a piece of land and handicap the manager in protecting and maintaining the wilderness values. We had wilderness areas long before the Wilderness Act was ever passed.* So it seemed to me that wilderness by act of Congress would be a rather inflexible step to take and wouldn't serve the wilderness cause best.

After awhile I think I became convinced that with the attitude of some people of distrust for the Forest Service, maybe congressional approval of this land classification was needed. Such congressional policy would avoid possible administrative action to destroy wilderness in the future. Now, I considered these dangers as practically nonexistent because I couldn't imagine the Forest Service having established a wilderness area and then later on trying to change it substantially or to abandon it.

I thought that this was highly unlikely, but human nature being what it is there was a possibility, and, until the responsibility was taken away from the secretary of agriculture and put in Congress, you couldn't be sure that the secretary might not change it. You

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*Wilderness Act of 3 September 1964, 78 Stat. 890, 16 U.S.C. secs. 1131-1136 (1966).

can't be sure today that Congress won't change these things in the future under the pressure of need for more resources. So I wasn't enthusiastic about the Wilderness Act, and, on the other hand, I wasn't opposed to it.

I think that the experiences we've had since it started have proved how inflexible it is. For example, in this region there would have been quite a few more wilderness areas established than now exist if it hadn't been for the Wilderness Act. The Wilderness Act set up certain processes that had to be followed. Hearings had to follow a specified pattern. Mineralization reports had to be made and formalized. A congressional act was necessary to establish the wilderness. Before the Wilderness Act the procedure was more simple.

When the act passed, it required also that the Forest Service first review the primitive areas and establish them as wilderness or else abandon them before proposing new ones. Eventually we'll get these other areas studied and in the wilderness system, but accomplishment is slowed down. I have no strong opposition to the wilderness system, and I certainly wouldn't argue against the wilderness system on the strength that it is a single-use system.

ERM: Is the system of primitive areas or wilderness areas part of multiple use in your view?

JHS: Yes, I think it can be so construed, and I do so construe it. In the management of a large area of land we have areas that do have merit as wilderness, and people need and want wilderness. So it can become a part of a multiple-use program for large areas.

ERM: One encounters the question very frequently, and I'm sure that you've encountered it, that if an area is made a wilderness area under Forest Service jurisdiction, should it not then be transferred out of the Forest Service into the national park system? How do you answer that question?

JHS: I don't think the National Park Service has any more ability to manage a wilderness area or a recreational area than the Forest Service. I think we have men that are quite capable in both agencies, so I can't think of any good reason for such transfer.

ERM: I don't either, but I think a lot of naive people in society do think in terms like that.

JHS: This is because such a thought has been spread about and fostered by preservationists like the Sierra Club. This group of people is suspicious of the Forest Service and would criticize almost anything the Forest Service did. They also think they have more control over what the Park Service does.

ERM: Is there some notion involved here that the Forest Service stands for management of the land and somehow or other the Park Service stands for just leaving the land alone?

JHS: Oh, yes. I think that's probably the concept that many people hold, and I think it's true. It's true only if in defining management you recognize that management includes, not only the development of recreation and the harvesting of timber crops, but also the establishment and the management of wilderness areas.

ERM: Why did the Sierra Club and especially David Brower criticize so strenuously your proposal of February 16, 1959, for the establishment of a 422,925-acre Glacier Peak Wilderness Area?

JHS: [Laughter.] They criticized it because they wanted the wilderness to include areas that weren't included. In our regional recommendation we left a corridor up the Suiattle River. We left that corridor because there was patented mining land near Suiattle Pass and mining claims were active. There was a mineralized body of ore that, under the law, the owners could develop. They had the right to a means of access to get their equipment in and to get their ore out. We knew this was the case. The facts were clear. Bear Creek Mining Company had been doing diamond drilling there and had unquestionable evidence that there was an operatable ore body on their lands and claims. There was also an operating mine at Holden on the other side of the mountain on Railroad Creek.

ERM: What kind of ore are you talking about here?

JHS: Copper ore. It seemed to me that if access was needed to bring in equipment and remove ore, it would be folly to include it in wilderness, so in our first proposal the corridor was left out. This was one of the points of criticism.

ERM: Would this have destroyed the wilderness values in your view on either side of this corridor?

JHS: I don't think it would have destroyed the wilderness values on either side of the corridor because I think the road could have been

built in there without it being something that would be visible very far. If there hadn't been commercial mineral in the area, it would have been proper to include the whole area in the proposed wilderness. No corridor was left in the wilderness finally established. A few years ago Kennecott Copper wanted access to operate the ore body, but public pressure along with the low price of copper has prevented this.

ERM: In other words, the exploitation of the copper resources were shut off?

JHS: Yes. I have certain doubts they'll ever operate the ore body, although they have a perfect right under existing mining laws to do so. And they own two hundred and fifty acres of land.

ERM: Hadn't that been taken up by the government?

JHS: No, if the government is to acquire Kennecott interests, it will be costly. I suppose the government could condemn the land and mineral rights. The court would then set the price, and I believe it would be high.

ERM: And is that ore body a very substantial one?

JHS: Yes, it is. Mining engineers for the company estimate that this ore body would require at least twenty years to mine. Now more recently, with the development of equipment, they propose to take the stuff out of there through a stripping process and this would really make an impact on the wilderness values in the area.

ERM: Did you run into a similar crisis regarding the Three Sisters area in Oregon?

JHS: Not on mining, although they have a problem there right now. Of course, that mining claim has been there for quite a few years, and when I was still active the company was talking about going in there. Then their interest waned, and it's been revived most recently.

ERM: Is it copper?

JHS: No, this is pumice, block pumice. Ordinary pumice can only be removed under a permit from the managing agency. Claims cannot be staked nor patented. The Forest Service could stop ordinary pumice mining in the Three Sisters by not issuing a permit. However, since it is high-quality pumice, block pumice,

then it is locatable under the mining laws. Mining cannot be stopped by administrative action, but the Forest Service will have some control over the location and standard of roads needed for mining.

ERM: What was your particular crisis with the Sierra Club over the Three Sisters area?

JHS: For some years a substantial area around the Three Sisters had been classed as primitive. A new and somewhat more restrictive regulation was established, and the Forest Service began reviewing primitive areas and studying boundaries for reclassification under the new Wilderness Regulation. We were studying the Three Sisters to determine whether it ought to be continued as a wilderness under the Wilderness Regulation and where the boundaries ought to be.

We proposed a wilderness that eliminated some fifty-three thousand acres on the west side of the area from the original primitive area and recommended that the balance be established as a wilderness area under the Wilderness Regulation. The Sierra Club didn't like that. We had a public hearing in Eugene, and there was a lot of testimony against it. The Sierra Club doesn't like to see anything eliminated from any area that might have potentiality as a primitive area or wilderness area, so they opposed this elimination. There was much support for the Forest Service proposal. A recommendation was then made by me to the chief following a study and public hearing. The chief and secretary approved it. The Three Sisters was designated a wilderness in about 1955 or 1956.

ERM: Another original proposal you made in the 1950s had to do with the boundary of the Glacier Peak Wilderness Area, and this was later revised by the Forest Service. Why was this revision of your original proposal made?

JHS: I can't remember too well what recommendation was made and then reviewed and changed. We made a study and followed it by a recommendation for a Glacier Peak Wilderness. Following the public hearing, the boundaries were changed to include a corridor left out of our recommended wilderness to provide access to valid mining claims. A few other minor boundary adjustments were made along the Suiattle and White Chuck rivers, Agnes Creek, and in the northwest corner.

After the hearing and after review of the revised proposal by the chief's office, the secretary approved establishing Glacier Peak as a wilderness.

ERM: You took an active stand, of course, regarding transfer of the North Cascades.

JHS: Yes, I did.

ERM: Would you set forth your feelings about that position--what you did and why you did it?

JHS: It seemed to me that the Forest Service management proposed for this area was very similar to what the Park Service was proposing. But it seemed to me that our proposal provided better for wilderness in the area. I felt that we could do as good a job as the Park Service in developing and managing this area for recreation.

Besides that, we could do it cheaper because we could manage this area without establishing a new administrative office. The Park Service would have to set up a park superintendent's office with staff and a whole new set of rangers. And we couldn't eliminate our Mount Baker supervisor's office because of the elimination of this area, nor could we reduce the number of ranger districts.

So we could do the job just as well as the Park Service would do it and at a cheaper cost to the United States. So there did not seem to be any justification for changing the jurisdiction of the area. That's why I opposed it.

ERM: Walter Lund in an interview we made several years ago stated that you had a lot of influence on the development of recreation in Region 6 and that you devoted a lot of your time to things such as the Wilderness Bill.* Would you say that was true?

JHS: Yes, I did devote a lot of time, and I hope I had some influence in developing an interest in recreation and in the management of this resource under a multiple-use program.

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*Walter H. Lund, "Timber Management in the Pacific Northwest Region, 1927-1965." Typed transcript of tape-recorded interview by Amelia Roberts Fry, University of California Bancroft Library Regional Oral History Office (Berkeley, 1967).

ERM: What motivated your deep commitment and involvement in this thing, beyond the fact, of course, that these were lands under your administration as regional forester? Did you have any strong feelings about involving yourself in these struggles?

JHS: No, I had no other thoughts than that this was part of my job and the important thing for me to do was to provide what leadership I could in my position to bringing about an increasingly better job of multiple-use management on the national forests. I was convinced that multiple use and the proper application of it on the ground was important to the welfare of this country.

ERM: Some of your critics made a great point of the fact that a lot of the land in Region 6 was still in a state of limbo; that is, the Forest Service hadn't yet decided what was to be done with these lands and, perhaps, some of them were going to be used in other ways other than wilderness use. Was your opposition to the wilderness legislation an attempt to stave off intrusion upon the future timber management plans, for example, that might be developing for those areas?

JHS: First of all, I didn't actively oppose wilderness, or the Wilderness Act. I explained earlier my personal feelings at the time, but this didn't cause me to carry on any sort of a crusade against the Wilderness Act. I didn't feel that it was either my place to do it or that it was the proper thing to do. I don't believe I should be cast in that particular role.

ERM: How did your staff in Portland feel about this Glacier Peak Wilderness Area issue? Were there those who took different strong points of view on it within the Forest Service?

JHS: There were no views within the Forest Service that this area shouldn't be in wilderness. There were differences as to where the boundaries should be. We had much discussion of this particular matter, and I hope that we finally had a consensus of view, although I wouldn't say that everybody was convinced. You finally reach a stage in these staff discussions where a decision has to be made, and it was my responsibility to make it.

ERM: As in Harry Truman's famous words, "The buck stops here."

JHS: Yes, the buck stops here [laughter].

ERM: How did Walt Lund feel about expansion or contraction of wilderness areas?

JHS: He may have expressed himself on this subject in his interview, but my understanding of Walt was that he believed in the need for having some wilderness. But I also think that Walt was in favor of setting up what you might call backcountry areas without going through the formal dedication of them. He felt that the dedication of areas, even by the secretary of agriculture under the Wilderness Regulation, would make management too inflexible. Walt did not oppose the idea of wilderness, but he questioned the mechanisms that we followed in setting them up.

ERM: There are those who would say that Mr. Lund was trying to forestall any closing off of these lands forever from possible other uses and that as such he was, perhaps, representing the interests of other users or at least their philosophies. Would you say there's any justification to that?

JHS: No. Walt Lund was thought of in some quarters as being a timber man, a man who was close to the timber industry. Walt was one of the most fair-minded individuals I've had on my staff, and I think that he had an undeserved reputation there. I think he was a pretty broad-gauged individual in a lot of his thinking. Now, this doesn't mean that we agreed entirely. I never agreed 100 percent with any of the staff. That's natural. But he certainly wasn't one who had his mind closed to wilderness. He thought that wilderness and recreation were important uses of forest lands.

THEORY AND PRACTICE OF MULTIPLE USE

Multiple Use: A Questionable Land Ethic?

ERM: Herb, I would like to discuss with you now the meaning of multiple use. Multiple use implies that utility is the important factor being given consideration; use implies utility.

JHS: It sounds like it gives emphasis to utility, but you've got to remember that use includes not only the harvest and use of timber, but also includes the use and preservation of scenery and the use of the forest for recreation. So I think use has a much broader significance in the term multiple use than just commodity utility. It has utility for the re-creation of the human soul and the human individual.

ERM: I think that's possibly part of the trouble that exists now in the debate over this policy and its meaning. There are those who will argue passionately that multiple use just doesn't mean a damn thing, really, that it is an empty term and a bankrupt policy. This is the argument that you confront from the preservationists' side, is it not?

JHS: That's right. I've tried to look at views of opponents of multiple use as objectively as possible. I can only conclude that these people do not understand what we are saying. I do not think they listen. Failure to listen creates misunderstanding. To the nonlistener multiple use is defined by him as some distorted concept he can easily destroy by his own logic. This is partly the reason why I think the 1960 Multiple Use Act was so necessary. First of all, the Multiple Use Act gave the basis of law to the policy that we'd been following over many years. In addition, it provided a needed definition. This definition stated that we would manage lands for all of their many uses. We would resolve the conflicts so as to obtain the greatest sum total of values for the American people, and this didn't necessarily mean dollar value.

ERM: To what extent do you see the current controversy as an attack upon the authority of an established professional forestry and an established agency of the government like the Forest Service?

Are rival groups of professionals seeking to assume your pre-eminent role in the management of the forest?

JHS: I don't know that I view attacks on multiple use as attempts by the other agencies to take over Forest Service responsibilities in management of the national forests. Rather, I view it as an effort by preservationists to discredit the concept because they believe it stands in the way of their single-use ideas. Some opponents honestly and sincerely believe their single or limited use is more important than any other use and that these other uses should give way. I have a feeling that many multiple-use opponents do not realize the great diversity of soil, forest types, age classes, vegetative areas, and animal life that exists in a forest. This diversity seems to me to necessitate multiple use if we are to work with, and not against, nature. These diverse factors must be evaluated almost acre by acre as a basis for management. I do believe some opponents of multiple use would like to see the Forest Service discredited and moved to an agency where they might have more potential control.

ERM: Do you respond at all to their demands that we need an entirely new enunciation of the land-use ethic at this point in our history?

JHS: I don't believe we do. I think that the multiple-use statement is a good, solid, sound land-use ethic which is in harmony with nature itself. We're dealing with an inseparably interrelated community of plants, animals, soil, water, air, and man, and multiple use is an appropriate concept to govern management. It provides for a logical recognition of this inseparable interrelationship in a way that will provide for the varying needs and wants of people. I think we've got a good ethic. I think we need to make progress nationwide in preparing acceptable land-use plans with effective application. A multiple-use plan on a national forest is essentially a good land-use plan.

ERM: I think that perhaps the multiple-use concept is, like all other things, a dynamic thing. It's changing; it's not standing stock-still on a solid line of doctrine that will never change.

JHS: I think that is right. I think that's the way any plan should be regarded. We don't know the final story on anything. We're going to learn more about nature itself as well as the interrelationships between the various elements of the wild land community. In addition, we're going to learn more about man's needs and man's

wants. Man's needs and wants are going to change with changing times. We've got to be ready and able to change this multiple-use concept and our plans to be in harmony with these changing times. So I hope we always maintain this flexibility in our multiple-use planning and in our understanding of multiple use.

An Interdisciplinary Approach

ERM: Do you feel that multiple use is becoming a more and more sophisticated policy?

JHS: Yes. It's becoming improved with time. I remember one of the first efforts of multiple-use planning in which I was involved. In Region 8 we tried to define on a map the primary land uses with appropriate symbols. We ran into many problems. It was a crude device, but it was a start.

It led to further thinking and improvement of the mechanisms of planning. This kind of pioneering was done in all regions. Today we have something much improved but not the ultimate. You have heard of the multidisciplinary planning of the Forest Service going on today. This is a further refinement in our multiple-use planning operation.

ERM: Yes, I have, and I've heard it enunciated at the American Forestry Association meetings here this week.

JHS: Right.

ERM: However, one of the things that troubles me a little bit is that even in the consideration of who shall be included in a multidisciplinary team, there is still a heavy emphasis upon engineers, landscape architects, people in areas of technical or semitechnical skills. Much too rarely do I see disciplines representing the humanities or the social sciences. They are beginning to creep in slightly, I recognize. Here and there a sociologist is mentioned; and every now and then you get an anthropologist, or even now, bless their hearts, we're even getting a historian with his nose under the tent flap, but it's still a very minor kind of input as compared with these other disciplines that are, perhaps, more closely related to forestry as a profession.

JHS: Well, I agree with you. I think that there is a need for social scientists on a multidisciplinary team. I hope and believe that the Forest Service in its planning is going to move in this direction. Perhaps it's natural to start with these engineers and foresters because those are the kind of people that we already have, and we're trying to bring them together. We're also faced with the problem of funds with which to hire these other types of consultants. But even at that you'd be surprised at the interest that some of these engineers and foresters have in the history of their area. There is some recognition that in the planning we need to consider the local history.

I can give you a specific example. We had a man who was chief engineer on the staff of the supervisor of the Deschutes National Forest. His name was Slim Hein. Slim was a practical engineer. He really wasn't a professional graduate, but he got interested in the history of the area and particularly in where trails of such people as Fremont and others would intersect some of the roads. He felt these ought to be marked. These ought to be brought into the harmonious plan of making the forest most usable by all interested groups. So he started some of that. Then he retired. Since retirement, he's made local history one of the special interests of his. He has researched the history of the area, and he's been helpful to the forest in bringing some of his thinking into the planning. This is just one illustration. There are others. I'm not saying that this should eliminate the need to recruit professionals in the social sciences. I hope that in multidisciplinary planning the Forest Service is going to seek professionals with training in social sciences.

ERM: I think it always tends to break down, Herb, at the point where you have to say, "But we've only got so much money to spend."

JHS: Yes.

ERM: How you spend your money does indeed reflect where you put your emphasis.

JHS: Sure.

ERM: And here you're faced today with a social problem as a profession and as an agent. You're under attack.

JHS: Yes.

ERM: And part of your defense, it seems to me, will have to be drawn out of a better knowledge and ability to interpret your past. You must be able to explain to the public not just your present situation and what you're planning to do, but what has gone before. Armed with better knowledge of your history you can explain, in terms that are meaningful to the public, how it is you have come to this point in time and how forest policies have evolved. In these interviews we are seeking to draw out of you leaders in the Forest Service the guts of this history. I hope that someday the Forest Service has the good sense to set up a research station that will deal specifically with this problem. You deal with many other major areas of your concern: insect control, fire control, grazing, what have you, all the technical or economic areas. But here's the social area.

JHS: I agree with that, but we have already started in this direction. In Seattle there's a unit of the Pacific Northwest Forest and Range Experiment Station with John Hendee as leader. This unit is dealing with recreational problems. They do have a social scientist on their staff, and they do draw on the departments of social science from the University of Washington in connection with their research.

One of the specific research projects that they recently conducted dealt with the question of litter. Their project went into questions of, why do people throw litter around, and how can they be involved in cleaning up litter, not only their own, but others? Social scientists were involved in planning and conducting the studies. They found that with kids, incentives were very effective in getting litter cleaned up on campgrounds or in theaters. These studies are continuing, and I am sure will be helpful to the practicing land manager.

ERM: I know and I applaud the efforts that men like Hendee are making. I think they're splendid. I'm just questioning whether you give as much support to that kind of activity as you should, given the fact that you are confronted now with a monumental people problem.

JHS: Yes.

ERM: Isn't this the crux of the argument today? And does not the imposition of this new--it isn't really new; it's been developing for years--but does not this problem call for a much larger scale effort in this field?

JHS: I think you're right. I think we should get into a larger program of research on people problems as well as a larger program of people management on the national forests. I think we are moving, but, I agree, we ought to be moving faster. I don't think people ought to blame the Forest Service for not moving fast enough in this area because I know that the Forest Service has had many of these things in their budget requests. They have been continually shot down by the budget people. They have a problem, I suppose, of trying to hold the line with the president's national fiscal policies and programs. So something like this they tend to equate with whether or not we need to build more bombs for more destruction, and bombs get the nod. I think we ought to get the hell out of the war right now, and this should make more money available for constructive purposes.

ERM: A lot more money available.

JHS: Yes. I think that the real responsibility for lack of progress lies at higher levels than the chief of the Forest Service or the Forest Service organization. It lies with the president of the United States and the Congress. The chief stumbling blocks appear to me to be the Bureau of Budget and the president.

ERM: I couldn't agree more.

What Is Multiple Use?

ERM: Well, Herb, you've had a lot of time to think about multiple use since we talked in Seattle during the recent annual meeting of the American Forestry Association.

JHS: I'm continually thinking about multiple use because these days one of my main concerns is to do all I can to help people to understand better what multiple use really is and how important it is to good management of our resources and making them best serve the needs of all kinds of people.

ERM: How would you define multiple use?

JHS: I look on multiple use as a concept of management which is based on the recognition that a forest land is an inseparably interrelated community of plants, animals, soil, water, air, and man, and what we do in the treatment of any one element will have an impact or influence on every other element. Therefore, multiple use to me requires a complete examination of all of these elements, a recognition of the various alternatives of management, and the selection of that alternative which will provide the sum total of benefits of all of these inseparably interrelated resources to meet the needs of man.

These are a lot of words, and I have the view that it's very difficult in words to give a definition of a concept which then will be similarly interpreted by everybody. That's why I think that it's important for people to try to see the application of this on the ground. Multiple use doesn't mean to me, for example, having every use made of every acre. That is just impractical and impossible. But it does mean that we are managing the forest crop on a given area of land with full recognition of the soil that we have and how the logging or operating methods may impinge on that soil and with recognition of the scenery and the recreational values that may be involved in this area of land and identifying how the operating processes may impinge on this. I could go on and cover all of the other resources this way. On the basis of this knowledge, the possible management alternatives must be identified and one selected which will serve the objectives of ownership best and achieve the greatest utility and harmony between the needs of man and the needs of the land and resources.

Multiple Use of Private Lands

ERM: How would you apply that idea both to those who manage privately owned lands and then to those who manage publicly owned lands, because they have purposes, too?

JHS: That's right, and this is what I was just about to get into. In the case of public lands, the objective of management is to make the best sum-total use of these resources in a harmonious combination that will serve the needs of people all over the country. But with

private lands the objective of management is somewhat more restricted. Generally with a company that manufactures paper, for example, their objective must be to provide a raw material supply to operate their mill. Now, I think in addition to that, because they are landowners and this wild land is of concern to the public as well as it is to them, they must examine what other resources are involved in their land and try to design a use program which will, while serving their objectives, also serve some of the public needs.

An example would be hunting. Their land may have a supply of wildlife, and their management program will provide for a continuous sustained harvesting of the forest crops, which is generally very much in harmony with providing a good food supply for wildlife. But unless the wildlife crop is harvested the various resources may get out of balance.

Opening their land for hunting so that a proper harvest of the crop is obtained is a course which will restore and maintain resource balance and serve a need of man. Opening lands to hunting may increase fire hazard and vandalism, and measures may be necessary to meet these risks. Some of the private land may possess scenic values, which may be utilized to good advantage. In the long run, it seems to me a mistake for a private owner to withhold his land from uses which can be harmonized with his own needs.

ERM: What you're saying, it seems to me, is that all agencies or organizations that have control over the management of land, public and private, derive their authority from some source other than themselves and that source is in a sense the nation, the public. Is that right?

JHS: I think I could say it this way. The private owner has title to a piece of property, but this is a piece of the earth which is also necessary to the welfare of many other people, and no landowner can overlook this. I believe myself that the days are past when a landowner can say, "I own this piece of property, and I can do anything I want on it, even to letting the soil wash away." There are now too many people, and we know that ignoring the needs of any group leads to great problems for future generations. So I believe we can no longer accept that general thesis. All private landowners must recognize that they do have a right that needs to be protected in the ownership of property, but they must themselves be concerned with the needs of others.

ERM: You've dealt with many people in that sector and in the course of your career, especially while you were here in the Pacific Northwest. To what extent do you believe philosophies may be changing to accommodate that idea?

JHS: I think that the majority of corporate landowners have that point of view now. A corporation is sort of a long-range business enterprise. It doesn't terminate with the termination of some individual's life. I believe that the majority of landowning corporations have this view today. They recognize the public interest in their property and the need for them to protect that in their management and make it available insofar as it can be in harmony with their goals and objectives.

ERM: It wasn't long ago that it was common to hear men say, "I'll be damned if I'll do anything with my land except what I want to do with it."

JHS: Yes, I know. That's true.

ERM: How recently in time do you remember that expression being current? Was this current when you came out to the Pacific Northwest?

JHS: I think it was beginning to change then. I don't think it had gone as far as it has today. Today I really think that the majority of corporate landowners do recognize this responsibility. There are probably different degrees of recognition even today, but I would say that this has developed rather rapidly since the Second World War. Before that there was a general feeling of concern that they needed to have control over their property and be able to do what they wanted. Their primary motive was profit rather than good land management.

But this thing isn't something that just didn't exist before the war because this has really existed in different degrees for quite awhile. I remember Andy Gennett of the Gennett Lumber Company in Ashville, North Carolina, with whom I had some real interesting conversations. We made a two-day trip one time, back in the thirties, together over some of his property, and I would say that Andy had a real broad-gauged view of his responsibility as a land manager. He didn't see at that time how the returns that he would get from harvesting timber and utilizing other resources would be enough to enable him to practice multiple use. His general plan of operation then was to harvest the raw material

and then dispose of the land to the Forest Service. We bought several of his cutover tracts. Also, we bought one of his old-growth timber tracts, which I think I mentioned before in our interview, and which became the Joyce Kilmer Memorial Forest.

ERM: Can you think of any example of this sort in your experience here in the Pacific Northwest? Can you single out an owner who gave evidence in conversation or in action involved with the Forest Service, a trend of thinking like this?

JHS: I think that Crown-Zellerbach Corporation has had a rather advanced view of their responsibilities, and they have been among the first to manage this property of theirs with some consideration of water, wildlife, recreation, and the needs of communities in which they operated. I think Weyerhaeuser has, also. And, of course, there are some nonoperating owners like the Hill Foundation that still have rather substantial ownership in Oregon. Dave [David T.] Mason, of course, has supported this idea for quite a few years.

Sustained-Yield Forest Management Act of 1944

ERM: How great an importance has Dave Mason had in this development of a multiple-use concept?

JHS: I think he has had quite an influence in developing the idea of public and private owners working together with their properties, more perhaps for providing for a higher level of sustained yield to serve the community economies and perhaps not so much in terms of recreation and wildlife use.

But he was quite instrumental in the development and the final passage of the Sustained-Yield Forest Management Act of 1944.* Under this act the Forest Service did enter into a ninety-nine-year agreement with the Simpson Timber Company in Shelton, Washington,

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*Sustained-Yield Forest Management Act of 29 March 1944, ch. 146, 58 Stat. 132, 16 U.S.C. secs. 583-583i (1964).

in which the Forest Service's timber was pooled with the company's timber to provide a higher annual cut to support the communities of Shelton and McCleary than could have been possible under sustained yield for each property individually. The company property was pretty well cut over, and they would have had to reduce their cut to get on sustained yield. On the other hand, the national forest property was pretty largely old growth. If sustained yield was applied on that property alone, the cut of timber would have to be spread over a longer period than if the two properties were managed under a common plan of management.

The Simpson Timber Company has been very cooperative and has recognized the advantages of good management primarily from the timber standpoint. I wouldn't say thay have been in the lead in the development of the other resources of the land, but they were sufficiently concerned with it so that they put their land in a common plan of management with the Forest Service which did recognize that there would be recreation and hunting, and that has gone on.

ERM: It's my understanding that the Forest Service and Simpson have not always seen eye-to-eye through the years on the actual application of the idea. Could you expand a little bit on that?

JHS: Yes. I think most of our differences arise in the matter of appraisal of timber. You see, this contract provides that in return for them putting their land under this common plan of management, that they would then be entitled to bid on national forest timber in the unit without competition. This then means that the Forest Service must appraise the timber, and the agreement provides that the Forest Service will appraise it at the going price of timber. So we've used a standard appraisal utilizing costs that were average costs for good operators in this general area, and our differences largely have arisen because they felt our appraised price was too high. We were concerned that we not have the appraised price below what it should be because timber purchasers were watching this development closely and the contract required that we appraise the timber as we would appraise any other tract, at the fair market value of the timber at that time.

ERM: Has the Forest Service generally held firm on its appraisals or has it conceded to Simpson on price?

JHS: [Laughter.] I would say the Forest Service has--I don't like to say, just remained firm--tried to reach an agreement with Simpson on the costs and the values that were used in the appraisal. Where they could show us that some of our costs or some of our selling values were out of line, we were glad to review their evidence. We carried on numerous studies together, particularly mill studies to determine the grades that might be realized in the harvesting of timber from the unit. I think the Forest Service has been very assiduous in protecting the public interest, and I suppose the company might say that we have been too assiduous, and we have been unyielding in some cases. But there is always room for appeal of the region's price determinations, and they have been appealed to the chief. But I can't think of any case now where our appraisals were not sustained on appeal. I think such arguments as these are normal. You would expect them to occur when you have a contract of this sort.

ERM: Do you think a contract of this sort lends itself to a greater or a lesser consideration of the other aspects of multiple-use management?

JHS: A contract of this sort I don't think has interfered with the public use of the resources of national forest land and Simpson land in the form of hunting and fishing and even recreation.

ERM: But this whole sustained-yield contract was predicated pretty largely upon economic grounds, was it not, rather than on a consideration of other uses?

JHS: Yes, that's true.

ERM: Does the continued application of the sustained-yield contract with Simpson provide for any substantial consideration now of other multiple-use principles, or does the original economic basis of the agreement dominate?

JHS: This is pretty hard to answer. I really think that the Forest Service administration of the contract has recognized recreational values. Campgrounds have been established in the unit on national forest lands. We have encouraged people to go there and fish, and the road system is open to the public for this purpose. There also are some trails that provide access in the upper end of the unit to some of the lakes. Those trails are used increasingly by hikers.

ERM: Is there anything that would be considered in any way a wilderness area or a wild land area?

JHS: No. This would not be an area which could be used for a wilderness because of the contract. It is dedicated to timber production. The whole unit is pretty well roaded and consequently could not classify as wilderness. It is not wilderness under the terms of the Wilderness Act.

ERM: Where the hand of man has never set foot, as they jestingly say.

JHS: Yes, that's right.

The Public and Forest Terminology

ERM: During the recent annual meeting of the American Forestry Association in Seattle you and I heard a number of interesting papers read by representatives of the Forest Service, state forestry, industrial forestry, and preservationist groups. They seemed, to me at least, to present a distinct turning away from the use of the term multiple use to one of balanced forest use. Clarence Richen of the Northwest Timber Division of Crown-Zellerbach Corporation entitled his paper, "Toward Balanced Forest Use on Private Industrial Forest Lands." Rexford A. Rexler, regional forester of the U. S. Forest Service here in Portland, addressed himself to the same topic only applying it to public forest lands, and Bert L. Cole, commissioner of public lands from the state of Washington spoke on "Balanced Use of State Resources." The question I have for you is, Do you feel that the term multiple use has become so heavily attacked in recent years as to make it necessary to change the terminology of practicing foresters in order to establish a fresh rapport with the public?

JHS: I have thought about this question for quite a few years. This isn't the first time this has been brought up. People have said that the term multiple use has been misunderstood to mean every use on every acre, which it doesn't mean. My own feeling is that no matter which term you use those who oppose it will find some way to try to discredit it. I have no objection to balanced use. I do think myself that the term multiple use is not outgrown and that

it's as good a term to use as any. But if people do want to use the term balanced use that's fine with me if by balanced use they mean the same thing that I mean by multiple use. And I think they do.

ERM: What do you see as the factors that have brought the term multiple use into some disrepute today?

JHS: I don't really believe that the term multiple use is in widespread disrepute. Now, I may be wrong on that. I do know that preservationists like to present multiple use as multiple abuse and have other derogatory references to it. I think they always will, and if we didn't have multiple use, I believe they would find similar terms to describe balanced use. This is the fate of almost any term that you use for a concept of this sort. Multiple use is not a simple concept. It's complex, and some of the misunderstanding arises out of failures in the application of multiple use or the lack of understanding of the term.

There was a similar problem with the term selective cutting when it started back in the twenties. I can remember a lumberjack up there in Wisconsin. Somebody asked him one time if they selectively cut. He says, "Sure, we select cut all the timber that's any good and leave the rest." This was then used to discredit the term selective cut by those who didn't like to see any cutting done at all.

In the case of multiple use there have been, I'm sure, examples of bad land management which have been evident on the ground and people have said, "Look what happens under multiple use." In other cases, owners have pointed to increased deer populations and lack of erosion on cutting areas as examples of multiple use, neither of which were the result of positive planning or action. They just happened. There was no intent in their management program to modify their cut to provide food for deer nor was there any intent to avoid erosion. They were just lucky. If we claim such examples for multiple use, people will see through these claims in the long run and the concept of multiple use will suffer.

ERM: That's the next question I had to ask. To what extent is this a real confrontation between rivals in the area of forest land management, or to what extent is it only a tactical battle of semantics ?

JHS: I think it's used as a tactic in the battle of semantics, but it has a color of truth from mistakes that have been made in actually trying to apply what the people say is multiple-use management to land.

ERM: The unsophisticated are, of course, always the target in a war of words between rival groups. Can you think of any examples of this that have emerged in other times and places in your career where there has been this war of words? You've cited one when you told the story of the lumberjack in the Lakes States. Can you think of any others where this has been true?

JHS: I think that it's probably true of most of these terms. Thinning, for example. Sometimes we've talked about having gone into a stand of old-growth timber or fairly old timber and thinned it. Now, this was probably a selective cutting, but we haven't given quite enough attention to a more precise use of our terminology. This has led to misunderstanding. I mentioned these two silvicultural terms, you might call them. I think that we have been guilty of misuse in talking about some of our wildlife management applications. We have represented results that were done without any intention whatsoever as illustrating that we were carrying out planned multiple use.

ERM: Luck plays a big part in the game then, doesn't it?

JHS: I believe we should call unplanned good results accidental rather than luck.

ERM: Let me just cite a few that strike me as having been a part of this continuing war of the words. Sustained yield, for example, was highly touted during the forties, but its application has been very limited. Where can you point to a sustained-yield unit other than the Simpson one?

JHS: The term sustained yield is another one that is an outstanding example of a variety of understandings as to what it actually means. We don't have any other cooperative sustained-yield units such as the one with Simpson because there are no other situations in which this kind of a cooperative management program will serve the public best.

ERM: You mean in the whole United States there isn't another one that you could set up that would serve the commonweal in the same way that Simpson's does?

JHS: I probably would be out of place in trying to say that in the whole United States there is no such area, but there are no other areas in Region 6. I can say that because I've examined a number of them. There have been several situations in which an application was made and which we studied for a sustained-yield cooperative unit, but in those cases there wasn't the situation to justify it. For example, we had an application on the middle fork of the Willamette, at that time owned by Pope and Talbot; I guess they still own it. They owned alternate sections in an area. The amount of timber and land that they had to include in a cooperative unit down there was a very small percentage of the total needed to sustain Oakridge. The United States government, in my opinion, would not be justified in entering into a contract with such a small commitment by the private owner and such a large one by the government. The company was interested in it because they would be getting the timber without bidding. This was not a justifiable reason. It didn't measure up under the law itself. I think this was true of other applications with which I was familiar.

ERM: Was that true of the old Herrick property in eastern Oregon which was taken over, I think, in the thirties or forties by Hines Lumber Company?

JHS: Absolutely, because there the Hines Company had very little timber. They talked about this. The Sustained-Yield Act permits establishment of federal units where only federal land is available. But it says such agreements will be entered into only in cases when the stability of dependent communities will be served by it. Well, the stability of Burns and Hines was not threatened by not having a unit. As a matter of fact, Hines was the only company there. They were in a position to outbid anybody else that might come in. It is interesting to note that even without any federal or cooperative unit, the Forest Service had the same complaints from Hines about appraisals as from Simpson. Without competition, there is the urge to beat down prices either with or without a unit.

ERM: Didn't they make a determined effort to get a sustained-yield unit going there?

JHS: No, they didn't because Charlie Hines held the view that they could meet the competition, and he just didn't feel that this was the thing they ought to press for. At that time lumber prices were good.

When prices declined, and later when the competition began to develop in that area, complaints on appraisals began to increase. But the Hines Lumber Company never did actively push for a sustained-yield unit. They couldn't qualify for a cooperative unit, but a federal unit there was a possibility. In my opinion there was no justification for it.

For example, if you're going to set up timber for the community of Burns, this means the community of John Day can't get the timber. They may have been getting some timber from there in the past, and their economy will be hurt by a unit tied to Burns. So when you help the economy of one community you may take it away from some other. Under those kinds of situations, competition is the best way to determine who is going to get the timber.

ERM: In other words, you think that there is very little likelihood that there will be any other long-term sustained-yield unit like the Simpson unit?

JHS: That's right. Now, we do have a couple of what we call federal sustained-yield units in this region, and there are some in other regions, but they're relatively small. There is one around Lakeview on the Fremont National Forest and another one on Grays Harbor out of Aberdeen and Hoquiam. I myself think that if we were doing it today there wouldn't be any justification for establishing those. They were established shortly after the Simpson unit was set up in the late forties and early fifties.

ERM: Other words and terms that have become haggled over have been these: tree farms, the great public-relations projection of private forestry that began in the early 1940s. Then, of course, we've talked about multiple use, and now we're into another one, balanced use. All of these things it seems to me are, what shall we say, the current nomenclature or sloganeering that we use to convey ideas to the public. Is that right?

JHS: I think that's what they do, and they have certain value for that. I think that one of the things that the foresters and everybody really ought to do, though, is to be more precise in their use of these terms. This would help to avoid some of the misunderstandings that do arise. But knowing how human beings work, including myself, it's going to be difficult.

Preservationists and the Forest Service

ERM: Have there been countervailing terms or words that have been used by your opponents over the years to downgrade these terms? You cited one. You said that multiple use has very often been put down by calling it multiple abuse.

JHS: That's right. We find that the preservationists who advocate wilderness, or national parks, or a status which will prevent any sort of harvesting, tend to say, "We need this park or we need this wilderness area to prevent the destruction of the land and resources." This is an entirely erroneous statement. National lands not in parks or wilderness are not destroyed. They may believe this. I think some of them do, and probably some of them know better.

An example of that is on the Minam in northeastern Oregon. Senator [Mark O.] Hatfield has a bill in Congress to add all of the Minam drainage to the Eagle Cap Wilderness. These things are represented as necessary to protect from destruction this property, and this is far from the truth. The Minam area has been managed by the Forest Service over many years, and it's still a fine property. It hasn't been destroyed, and no management proposed would destroy it.

The Forest Service has proposed building a road through the Little Minam drainage, not just for harvesting timber, but also to make the lower main Minam, which is an attractive area, available for motorist recreation. It is a beautiful stream and would provide some excellent campground sites for motorists who come in and camp and enjoy just the natural woodsy beauty of the area, fish, and do whatever they want in the way of recreation. This isn't destruction, but this is so often the extravagant term that is used by people to try to support their own desire.

ERM: What insights have you gleaned into this problem of gaining public support for a policy, recognizing, of course, that dissident groups have an initial advantage in throwing up an image of destruction. How can you deal with this?

JHS: First of all, I think that it must be recognized that some people are so bound up in their own ideas for an area that their mind is closed to any alternatives. I don't think that too much time should be spent trying to change their views because they aren't interested in hearing or listening. On the other hand, there are many people who

don't understand the management of forest land areas. If you can get them to go out and look at actual application of multiple use plans on the ground, this is one of the best ways in the world to help them to understand what you're really talking about.

ERM: But you can only get a tiny fragment of society to go out.

JHS: That's correct. You certainly can't get any large number. The hope, of course, is that you can get some of the leaders, some of the spokesmen, to understand your plan and that they in turn will help to inform other people. I think we have a continuing job of education which has to be directed, not only at some of the leaders in communities, but kids in school and all facets of society.

ERM: Would you think that the Forest Service stands ready to meet, head-on, criticism of its policy, or is it oftentimes, most often perhaps, taken completely by surprise?

JHS: I don't think the Forest Service is taken by surprise on these differences of viewpoint, and I hope that the Forest Service will always be ready to listen to others express their views. I hope it will always provide the opportunity to do this, and I think it is moving in this direction. Perhaps you could say that it ought to have developed earlier the mechanisms that it is using now.

ERM: Or sustained policies with more substantial application of the principles involved.

JHS: I'm not quite sure what you're getting at here.

ERM: Well, if you declare a policy of multiple use, you must energetically carry out its application on the land in order to make that policy real.

JHS: Yes, you should be sure that you're applying this policy of multiple use in all cases, that you don't have one timber sale, for example, in which you are just concerned with harvesting the timber and you're paying no attention whatever to other uses.

ERM: Failure on that count leaves you wide open to criticism.

JHS: That's right, and I think that we have been building understanding. Some of the things that we have done in the past in the way of building roads into areas to harvest the timber haven't given the

recognition to the soil problems that they should have. But I think that the Forest Service has come a long way in better multiple-use application. Now most of our roads are designed, not only by engineers, but with the expertise of the landscape architect.

This isn't something that's brand new. Here some years ago, when we started to think about a road up the Rogue River from Gold Beach to Agnes, we made a location. The location was then looked over by the chief of our Landscape-Architect Division in the regional office. We made adjustments, and it was looked over again. I think there was an advisory committee. I even had my regional advisory committee down there to look at it. We then finally settled on a location after we had had all of this input from our experts, who tried to avoid soil damage to the river and avoid affecting the recreational values or the scenic values that exist along the river. I think we got a location that does that. For a considerable part of its distance it's back from the river. You can't see it. There still is a real fine recreational boating program that goes on up that river to Agnes. If you want to really see the beauty of the river, you can do it there. It hasn't been destroyed by the road.

We started early to do these things. I will be one to admit that you don't get to heaven in one jump. It takes a period of time to gradually get this over to all of the rangers, the supervisors, and the staff so that you can begin to apply new ideas. We've had to develop techniques, also, but I think we've made good progress.

Multiple Use and Public Opinion

ERM: Let's look at this matter of the criticism of multiple use as a Forest Service policy. Do you feel criticism has first been noticed at the national level, the regional level, or the local level in the Forest Service organization?

JHS: I'm sure that Aldo Leopold and Bob Marshall made real contributions to developing an understanding of natural beauty and wilderness values, which then permeated downward in the organization. But this isn't to say that there weren't people already in the organization right on the forest who had these values in mind.

Fred Cleator used to head up the recreational program in this region before I got here. He did much to get the people in this region--on the ranger districts, in the supervisor's office, and in the regional office--to be aware of the importance of recreation. He held training sessions in which he helped these folks to be able to recognize scenic beauty.

I was looking over just the other day a second volume of the History of the Rogue River National Forest,* which has been written by Carroll Brown, retired supervisor of that forest. I noticed in there many references before and during the Civilian Conservation Corps to meetings that Fred Cleator would have that dealt with the layout of campgrounds, with the location of them, and recognizing the scenery, the beauty, and the need. Campground construction on the Rogue River forest at that time loomed important in the work program of the Civilian Conservation Corps camps. Incidentally, I meant to ask if you had gotten a copy of that because you might be interested. There's two volumes of it. It's a history of the Rogue River forest, largely being a compilation of some of the historical documents.

ERM: Let me go back to my question again because I don't think I quite conveyed to you the idea behind it. There is criticism of all government agencies at one point or another. Where do you usually encounter criticism first? Is it at the local level or the regional level or the national level?

JHS: I think that we hear the criticisms at the local level first, and I think it's real good that we have those criticisms there. One of the early types of hearings that we held were hearings on roads. We had a hearing on a road up the Minam. I guess it must have

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*U.S., Department of Agriculture, Forest Service, History of the Rogue River National Forest, 2 vols. ([Oregon: Rogue River National Forest, 1965]).

been in the late fifties. We heard there, not only views on standards of roads, which was the purpose of the hearing, but we heard views on whether there ought to be a road there in the first place. And these were good. I think on most all of our problems or issues we first hear them in the region, on the ground.

ERM: What mechanisms do you have for funneling this information up the line?

JHS: When we encounter those criticisms the first thing that we are interested in doing is to try to understand them, to try to find out what is there in our operation that is not so good, and can we change this to meet the criticisms? If we can, we do. If we can't, we have to make a decision. Then the people may not be satisfied, and this is fine, too.

I don't mean to say that we don't first get any points of view except at the ground level. For years we've had this Northwest Federation of Outdoor Clubs with which we have maintained a close contact, and we have gotten their points of view on some of the issues which were different from what the people right on the ground often had. They were strong wilderness supporters. Incidentally, they have changed over the years as their leadership has changed. Now they're pretty much under the direction of the Sierra Club, but I would say up through the middle fifties they were not the extremists that they have tended to become. We hear from those groups on some issues. We listen to them, and we try to determine whether these ideas are something that we can recognize and make changes to alleviate.

ERM: Do you think that government agencies are sufficiently tuned into public opinion?

JHS: It's pretty hard to generalize on that point. I think that many of them are aware of the importance of local views and of considering outside views. I think, however, that they are doing more of it now than they used to do. I think that's natural because more and more groups are becoming interested in every act of government. You see this not just with respect to the management of the national forests or forest lands. You see it with respect to the explosion of a nuclear blast up in Alaska and all the other issues that have bearing on the environment.

ERM: Have you ever felt that the profession of forestry was guilty of taking the view that only it knew what was best for the people?

JHS: I think there has been that mistake made by some foresters. I don't think it's proper to brand the whole profession of forestry in that way. But there have been foresters who have made talks or whose words would indicate that they thought the forestry profession had something sacred about it, but this was not shared by all foresters. I have heard people make these kinds of statements, and I always cringed at them because I know that foresters are men with frailties just like any other profession. They need to be ready to learn.

While they may have a certain professional expertise which is peculiar to them, they've got to recognize that the management of land goes way beyond the mere professional harvesting of forest crops. The professional harvesting of a forest crop is important in good land management, but they aren't necessarily the ones that have the complete answer as to what course the land management should follow.

Multiple Use: A Changing Concept

ERM: I gather that you feel the public has never fully understood the meaning of multiple use, that it's too complex for widespread understanding. Do you think then that a simpler terminology has to be devised?

JHS: No, I don't. I don't think you can devise a simple term to use for multiple use. I think that even foresters have different views on what is multiple use. I think it's always going to be necessary to continually clarify our own views. We must do this in talks with our colleagues. This should help each of us to do a better job of helping others to get a better understanding of what is multiple use. It's a complex term, as I said, and perhaps it's a changing term. I hope it is because as we gain new knowledge and new information we should be ready to change our concepts to fit this new knowledge.

The concept of multiple use has grown over the years. The germ of multiple use was contained in the letter from Secretary [James] Wilson to Gifford Pinchot in 1905 in which he says, "You will manage the water, woods, and forage of the Public Domain for the best use of all the people, and where there are conflicts you will resolve them for the greatest good to the greatest number in the

long run." There's a lot more in this letter, but to me this is the genesis of the concept of multiple use. Now, you will say, "There is nothing mentioned about recreation." And there wasn't because at that stage in our country's development there wasn't the interest in wild land recreation that there is today. There was much more outdoor recreation close to the cities, and wild land was still being homesteaded. Wild land recreation could not be given the same consideration then as it would be today.

Since the days of Pinchot, we've learned more about soil and about recreation. The people's need for recreation has changed, and there have been new techniques in the management of the forest itself. In those days we didn't have trucks to haul logs out of the woods. We didn't have the road systems that we have now. We didn't have the aerial facilities that we have today to protect the forests from fire and to harvest timber. Our concept of multiple use had to grow and change to meet these new conditions. I am sure this change will continue. Multiple use, however, still remains a solid, sound concept that can be adjusted to meet changing conditions.

ERM: Multiple use is a dynamic thing. It's not static.

JHS: That's the way I view it. For one thing, look how the complexion of the country has changed. In 1905 I don't know what percentage of the population lived on farms or in the country, but it was probably more than 50 percent. Today probably 80 percent of the people live in cities, and they have no conception of the forest whatsoever. What change will take place in the days ahead is pretty hard to forecast. We will have a continuing job of education, but it will probably have to be changed to meet the changing times. The application of multiple use will have to be adapted to the change.

A Planning or a Management Concept?

ERM: Is multiple use a management or a planning concept?

JHS: Well, multiple use is a planning concept, as I view it. Then there is the problem of applying the plan to the land to meet the objectives of the plan. I don't know whether I've made it clear,

but I view multiple-use planning as the first step in charting a course to meet established objectives. Application of the plan comes about through actual management of the land and resources.

ERM: In order to classify as multiple use does management necessitate positive improvements for each use?

JHS: You mean must there be an intention to improve the opportunity to view scenery, etc.?

ERM: Must it provide for improvement in each and every use that is involved?

JHS: I'm sure that it must provide for that. I think that any planning concept must also make provision for improvement in the techniques. I'm sure that if changes and improvements had not taken place over the years we wouldn't have good multiple-use management today.

ERM: Of course, there are some people who would insist that foresters cannot improve such things as watershed or wildlife conditions.

JHS: They may say that, but I do not think that is in harmony with experience. We do know that in the old-growth, coniferous forests there is much less food for wildlife than in an area which has been harvested and in which there is an additional growth of shrubby vegetation which provides the browse for deer and elk. We know that if the trees that will provide homes for osprey or for pileated woodpeckers are removed, the number of these birds will decrease.

ERM: Is there some tendency to see merit in an increase in the population of one animal or one bird but not recognize that other species have not prospered under the change? Some species go forward and thrive under the change. Some benefit of watershed may thrive under the change; others may suffer. How do you draw the line here on those things?

JHS: The only example that I can think of in which you might have an adverse effect on water and a positive effect on recreation and the harvesting of the timber crop would be construction of a road, which would enable people to get back to a lake where they could fish and over which timber could be harvested, and yet wasn't properly drained, resulting in soil being washed from the road banks and into a stream or lake. This siltation would be particularly bad for scenery and fish life.

Poor road construction is possible, but it results from failure to properly design and construct the road. If the road is designed and constructed with the full recognition of all of the possible impacts that it may have on these other resources, the adverse impacts can be avoided.

ERM: You clearly indicated that your understanding of multiple use is not one that makes for every acre having to have more than one use. Could you comment as to what is the minimum unit to be utilized for multiple use?

JHS: I think what I said was that multiple use didn't require that we have every use on every acre. Your question then deals with how many acres do you need to have a multiple-use program. I think the best way to give my view on that would be simply to say that multiple use is a planning concept, and as such it applies to a rather large area of land like a ranger district or a national forest. The application of the plan, however, must be tied to the ground conditions found on each acre. This doesn't mean that every use must be applied on each acre. The soil, geology, slope, aspect, age and condition of timber, and other factors, will govern plan application on each acre.

One of the best examples that I can give of this type of application is the case of the forest along the South Santiam Road in the Willamette National Forest. On one side of the road was a stand of overmature Douglas-fir with lots of defect in it and great blow-down possibilities. On the other side was a fine, much younger stand, perhaps eighty years old. Many recreationists traveled this road. It was important to maintain the beauty of that highway. The landscape architect that was with us said that the beauty of this highway will be much enhanced by harvesting this timber so that the wall-like effect of the forest on both sides was softened to provide an undulating effect on the roadside. Small openings could be made by patch harvesting in the old growth on one side of the road, and in the young forest on the other side a thinning would provide more depth for the viewer. It was necessary to look at each acre carefully to determine location and size of cutting patches and decide on tree spacing for the thinning area and the relation of cutting to highway safety on both sides.

ERM: I think you've answered my next question which was this. The overriding objective of any multiple-use plan is to spell out the extent and character of modifications in primary uses in order to accommodate the other uses as well as the necessary modifications

of the other uses to assure compatibility among them and with the primary use. Would you agree with that definition?

JHS: I don't know that I'm in full agreement with that. What you have said, as I understand it, is that where you have an overriding use, such as timber, the harvesting must be modified to serve the other uses which may be possible on the area.

ERM: The overriding objective of any multiple-use plan might not be timber. It might be something else, too.

JHS: That's right. The overriding objective of a multiple-use plan is coordinated management of all of the resources in a harmonious pattern of use to serve best the needs of people. That's the objective of a multiple-use plan.

ERM: What I meant to say was that what was thought of as the primary use of a given area might be different from one area to the other. In one area the primary use might be commercial timber. In another it might be recreation. You have to shift your gears.

JHS: Right. But even in the area where timber is the primary use, multiple use requires that you be continually watching out for scenic values that may be there. For example, if you have one area that is primarily for the harvesting of timber, it may be that in the harvesting you can open up a vista that shows a scenic attraction in the background, or it may be that there is an area which would serve well for a campground and harvesting of timber should be modified to permit its development.

That's why I don't like the term primary use. It tends to say that you subordinate every other use, but I contend that multiple use requires that you look at all of these areas with consideration of all of the uses they can provide. You may have one area on which the nature of the timber and the nature of the land will result in timber harvesting being the major activity on the area, but even though it's the major activity or the primary use, as you call it, you shouldn't let that move you not to consider scenery and water and the other resources that may be there.

ERM: Even if there are more than two uses on each area, isn't one use still dominant in most cases?

JHS: Well, I don't like the term dominant either [laughter].

ERM: I can see we're getting into a war of words here [laughter].

JHS: I suppose that you can say that where the silvicultural system that is most appropriate for the area is clear cutting, that on that clear cut, timber is the dominant use. In a sense it is. But it seems to me that you cannot avoid considering what the size of that clear cut should be in relation to its effect on surrounding scenery or wildlife habitat.

As an example of that, on the Mount Hood National Forest there is Timothy Meadows Lake. It's a lake created by the construction of a dam by the Portland General Electric, and there are some nice campgrounds on the lake. There is a substantial timber-harvesting program going on not far from the lake, but these units have been designed and located so that they do not detract from the view that you get looking out over the lake from any campground. You can see occasionally some opening, but it's a small opening and it tends to blend into the landscape.

Cutting units can be located on the slope toward the lake without detracting from the beauty of the lake. This could be done by making a clear cut which was no wider than the height of the trees on the lower side of the harvest area. The foresters were studying this possibility by means of a topographic map and aerial photos from which tree heights might be estimated. Recreation is the dominant use around the lake, but controlled timber harvest may be possible without impairing recreational values.

ERM: All right then, from what standpoint are we to judge the best combination of uses to which land may be put: local welfare, regional welfare, national welfare? And on what basis has this been determined? Some would say that it has been determined in the past mainly on the needs of the local community.

JHS: I don't think it can be determined on the basis of any one segment of the country. I think you have to consider the needs of people throughout the country as well as the site potential. Public reviews or public discussions at the time of designing a multiple-use plan for a ranger district can help to insure that all of these needs are met within the capability of the site. That's why I think that really the place to focus everybody's attention is on the development of the multiple-use plan and listen to the expressed views of local people and the views of groups like the Sierra Club or other groups that may represent a broader spectrum of the American people.

ERM: That brings us back to what you quoted earlier. Do you believe the

dictum, "the greatest good for the greatest number in the long run," is helpful in actual administration or decision making? Or is it as John Sieker has stated, "...like quoting the Sermon on the Mount and saying this is the way you have got to live. Sure, but nobody can do it"?*

JHS: [Laughter.] Well, I don't agree with John that nobody can do this. I suppose that he's right in a way because none of us really know what "the greatest good for the greatest number of people in the long run" really is. But the best we can do is to try to get all groups--local, regional, and national--in multiple-use planning. These groups must be aware of site potential and limitation. With this knowledge we can design a pretty good multiple-use plan, but it should have built-in flexibility for adaptations to meet change in the future. I wouldn't argue with John. His statement is a pretty broad generalization, and all generalizations are wrong, including this one.

ERM: What comment would you have on the validity of this other statement that was made by David Brower, who I'm sure you recognize?

JHS: I know him, yes.

ERM: He once referred, in the spring 1959 issue of Living Wilderness, to multiple use as "a political scientist's dream." He went on to say of multiple use, "It could establish a protective cordon of interest groups that could be played against each other on the periphery--and at dead center all could be calm. Are the miners asking too much? Just point this out to the grazers, loggers, water users, and recreationists. A game of musical chairs out under the trees."**

JHS: [Laughter].

ERM: What comment would you have to make on that?

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*John H. Sieker, "Recreation Policy and Administration in the U. S. Forest Service," typed transcript of tape-recorded interview by Amelia Roberts Fry, University of California Bancroft Library Regional Oral History Office (Berkeley, 1968), p. 25-6.

**Roy E. McFee, "American Primeval Forest," Living Wilderness 25, no. 68 (Spring 1959): 35-7.

JHS: Dave Brower is an expert at trying to play one interest against another. What he has said there to me is not multiple use. He's talking about individual interests being played against each other and with a result that you would have abuse of all lands. To me it isn't right to say that we should handle a certain area just for the production of timber crops to get the greatest number of board feet at the greatest dollar return, nor is it right to say that we should manage another area of land to get the greatest amount of grass and the greatest return from stock and to manage another area of land just for mining. This is first of all not multiple use, and this is not what anybody who really understands multiple use in any degree at all would say. So it seems to me that this statement by Mr. Brower is not designed to reconcile or to cast light on an issue. Rather it's designed to polarize groups and to play one group against the other. So I do not agree with that.

ERM: Do you think that's been Dave Brower's chief stock-in-trade?

JHS: This is the way it looked to me, and I think he has not been helpful in resolving issues. He's been more helpful in polarizing people.

ERM: What do you think his objective is in that? Is this a play for control?

JHS: First of all, I should say that I don't believe it's right for me to try to impute purpose to statements like this, but to me those kind of statements do not help. They tend to polarize people, and why they're said seems to me primarily to confuse people. It seems to me that Dave is trying to put himself in a favorable light as a savior and represent the opposition as confused even though he departs from truth in so doing.

ERM: Do you think this is a part of a studied effort to unseat the Forest Service as the nation's principal steward of public forest lands?

JHS: I don't know that I would be able to give any sort of a reasoned opinion on that. It certainly looks like he was trying to discredit the Forest Service by the things that he has said. All of these statements that you quote here tend to discredit the profession of forestry. They tend to discredit the Forest Service as the manager of land. They tend to equate them with people who are simply interested in getting the maximum board feet or dollar return from the timberland. Those are the things that he appears to be trying to do with that kind of a divisive statement. He's an expert in the use of words. I don't think he's doing it with an intent to help

foresters or the U. S. Forest Service but rather to misrepresent them and to discredit them in the minds of people he's talking to.

ERM: And with perhaps some long-range objective of wresting from foresters and the Forest Service their position?

JHS: This may be what he has in mind.

ERM: Here's another statement out of an "Outline of Working Standards, Forest Resources Appraisal as Tentatively Approved, March 10, 1944," authored by John B. Woods. "Multiple-Use Forests: Practically all forests are capable of providing multiple use. And such use is an element of good forest management where it is successfully carried out. One use, however, in the vast majority of cases, must predominate. A classification including the term multiple use is valueless and dangerous since it does not focus on the major use and is an invitation to loose thinking."*

JHS: I suppose all I can do is repeat what I said, that I do not believe in the concept of dominant uses. I believe that in the preparation of a multiple-use plan you may have one area contributing more to the timber supply than another area. For example, in a campground there will be less timber produced than if there were no campground. But if it's going to be a good campground, timber must be harvested to provide a safe and attractive area for people. Timber must be harvested in a way that will maintain the forest in a thrifty, healthy condition. Otherwise, dead and dying trees will become a hazard to campground use. Trees may blow over in windstorms; they are subject to disease attacks or lightning strikes. There will not be the same amount of timber harvested on that area as would be obtained on an area without a campground. In a sense I suppose you could call a campground a dominant use for recreation. But the term seems to imply that everything else gives way to timber. It is too narrow a statement to say that on a campground everything else must give way to the campground use. We must harvest timber there in order to be able to have a good, safe campground. But we aren't going to grow the same volume of timber in the long run that we get out of an area without a campground.

ERM: Are there not cases when multiple use would not make for the greatest good for the greatest number?

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*John B. Woods, "Outline of Working Standards, Forest Resources Appraisal as Tentatively Approved, March 10, 1944," p. 17, Box 18, American Forestry Association Papers, Forest History Society, Santa Cruz, California.

JHS: If an area in a multiple-use plan is designated for a wilderness, you might say that that plan isn't serving the greatest use to the greatest number, but I don't think that necessarily follows. We're talking about a multiple-use plan, which is a planning concept for a big area, all of which is not wilderness. It's just impossible to generalize on this. You have to get down to specific cases. There are many people who like to have wilderness even though they never may use it. I think that the very concept of wilderness itself implies and must imply that we aren't going to have great masses of people going into it. If we do it wouldn't be wilderness any more. But wilderness is generally regarded as needed by people whether they use it or not. The big questions are how much and where should it be?

ERM: Milton A. Pearl, the study director for the Public Land Law Review Commission, has asserted that multiple use is not a precise concept and, hence, means all things to all people. Would you agree or disagree with this statement?

JHS: I suppose you can say that multiple use means different things to different people. You can say the same about dominant use or most any conceptual statement. The differences tend to narrow and disappear when applied to specific cases. These misunderstandings generally arise because one person has in mind a different set of circumstances than the other fellow. So Pearl says that it "means all things to all people." It's probably true that there would be different views of the concept. I think that's true of any concept.

ERM: Have you ever preferred the term coordinated use?

JHS: I've used the term myself and thought at one time that coordinated use might be a better term than multiple use. But I've finally come back to the conclusion that multiple use is as good as any and that even if you substituted coordinated use you'd get the same set of arguments about it that you have about multiple use.

ERM: How did the various chiefs of the Forest Service differ in their views of land use and acquisition, especially multiple-use management, starting with [Henry S.] Graves and going on with [William B.] Greeley and [R. Y.] Stuart and [F.A.] Silcox, [Earle H.] Clapp, [Lyle F.] Watts, [Richard E.] McArdle?

JHS: I don't know how valid my observations would be with respect to Graves. I was not in the Forest Service when he was chief, but I was in the forest school when he was a dean [Yale School of Forestry] there. It was my view that Graves had a pretty

broad-gauged view of forestry and considered it to be the management of land and not just the management of a tree crop. He considered tree crops an important use of the land. Greeley, I think, had a realization of these other uses of land, particularly the water use.

I think throughout all of the early activities you find foresters and administrators of national forests aware of the fact that on the land which forests occupied there were other resources like water and wildlife. The fact of recreation use of the forest has been recognized for a long time. Expenditures for campgrounds in the early days were justified for sanitation and fire protection, but this use of forests was definitely recognized by all the early leaders. Bob Stuart was only chief about three years. He was chief when Copeland's report was written and had a hand in approving the design of that report, which did involve a lot of other uses besides timber.* Then, of course, Silcox was certainly a pretty broad-gauged thinker and concerned with these other uses. Watts, I think, was really outstanding in this respect.

So I do view all of the chiefs for the Forest Service that I've ever known--and I've known all of them--as being supporters of the idea of many uses for the forests. I don't know whether their views of multiple use would be like mine. Probably they wouldn't because mine have changed and grown over the years. I think I would have probably answered some of these questions differently in 1930 than I do in 1971 simply because we all grow. I hope we grow. We certainly must adapt our views to the changing circumstances and to changing technologies and practices.

Multiple Use and the Courts

ERM: Were you ever involved in any court cases in which Forest Service administrative decisions concerning multiple use were challenged?

JHS: No, I can't think of any involving multiple-use decisions. Let's see, no, I don't really think this a case. When I was supervisor on the Pisgah National Forest I was brought into court in connection

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

with a man who was arrested for taking a gun onto a piece of land on the Pisgah Game Preserve. The game warden arrested him. Then he sued for humiliation and suffered chagrin when he was in the clink for twenty-four hours. He named me in the suit along with the game warden. This was not a multiple-use matter.

ERM: You never came into a clash on that score here in the Pacific Northwest then. Is that right?

JHS: That's right. This business of bringing timber sales and multiple-use decisions into court is something of recent origin, and I don't recall any of it being done prior to 1967 when I retired.

Reasons for the Multiple Use Act*

ERM: What do you feel was the prime reason behind the introduction of the Multiple Use Bill?

JHS: The prime reason was that the Forest Service was committed to multiple use. It had been policy for many years, yet there was no congressional directive for practicing multiple use, and pressures by the various interest groups were growing. It seemed to us that we needed a legislative base to support our long-time policy.

We had no specific mandate to develop recreation use or to manage the recreational resource. The act of 1897 mentions water, wood, and forage, but there's nothing on recreation.** There was nothing with regard to multiple use. So it seemed to me and to the others on the chief's staff that this was a timely moment to get the matter before Congress to see if this was what Congress wanted us to do. This would give us strength to support our multiple-use decisions and to resist the efforts for special consideration by any interest. I think it was very timely.

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*Multiple Use-Sustained Yield Act of 12 June 1960, 74 Stat. 215, 16 U.S.C. secs. 528-531 (1964). See Appendix B, p. 182.

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

ERM: American Forests in February, 1960, indicated its editorial opinion that the recreational threat was the real reason behind the introduction and passage of the Multiple Use Act.*

JHS: The recreational threat?

ERM: Yes.

JHS: A simplistic reason like that does not tell the whole story. The Forest Service had been under pressure from the timber industry to avoid setting up too many wilderness areas. They pointed to the 1897 act as requiring us to manage the timber for timber products. The recreationists were beginning to be concerned that we were giving too much attention to timber and not enough to protecting the scenery and developing the recreational resource. The Wilderness Society wanted more area in formally dedicated wilderness. It was all of these various pressures that impressed many of us with the need for a multiple-use law.

ERM: Do you ever suspect that perhaps the real motivation behind the introduction and passage of the Multiple Use Act was something generated from within the Forest Service rather than from fear of anything outside itself?

JHS: I think that's right. Interest in such an act was generated from within the Forest Service. It was generated because we recognized these various pressures that were impinging on us. We had quite a discussion at one time in one of our regional forester and directors meetings with the chief and his staff over this particular issue. The discussion reflected that all of us were concerned that we should have the strongest base on which to support our multiple-use efforts. We were all sold on multiple use, and yet we realized the weakness of the legislative base, the 1897 act.

ERM: Do you feel there was any strong feeling within the hierarchy of the Forest Service that certain departments of the Forest Service were maybe getting a little out of hand in what they were doing and getting, perhaps, in a position where they had to be hauled up short and told, "Well, you're part now really of a multiple-use team, not number one or number two or number three on the list"?

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*"Multiple Use: A Concept of National Forest Management," American Forests 66, no. 2 (February 1960): 10.

JHS: What you're saying is that the various divisions of the Forest Service were running off in various directions supporting their own particular interests. I don't think there was a great deal of that. I'm sure that any division chief has a responsibility to his boss, the regional forester, or, in the case of the chief's staff, to the chief, to promote the development of his own field of activity. Some may be more aggressive than others, and they generally are branded with the stigma of not being multiple users and not giving consideration to the other fellow. These criticisms are good, healthy criticisms and help to hold all divisions together. As a serious problem, I don't think there was one.

ERM: You don't think there was any feeling at the top that there ought to be a little more tightening up of controls?

JHS: There was undoubtedly feeling through the organization that we needed better coordination all the time. I think that we all did recognize the need for better coordination, but I don't believe that this was a factor that caused the Forest Service to seek a multiple use act. I think the Forest Service sought a multiple use act because they were convinced that multiple use was the right policy to follow. We saw the various pressures growing and felt that in order to prevent being pushed into wrong decisions the multiple-use policy needed strengthening. I'm pretty confident that this was the motivating influence that led us to prepare a multiple use act and to go into it so wholeheartedly.

ERM: Do you think that in 1959 the Park Service's Mission 66 accelerated the movement for passage of the 1960 Multiple Use Act? Part of Mission 66's purpose was an expansion of Park Service acreage, and this in a way threatened the Forest Service.

JHS: I don't think it had any effect on the passage of the Multiple Use Act. I think Mission 66 really followed our ten-year program. I didn't view it as any sort of a threat to us. Of course, it was an effort to get more money for their administrative program, and we were concerned that Mission 66 didn't move at the expense of the national forest ten-year program. I don't remember any great amount of concern over it.

ERM: As regional forester, I'm sure you often were visited by VIPs.

JHS: [Laughter.]

ERM: Or you had them on your region--congressmen, senators, dignitaries of one kind or another. Was there any difference in the treatment afforded these folks who visited the national forests as opposed to those who visited national parks?

JHS: [Laughter.] I don't know that I can answer that because I'm not aware of the kind of treatment they got on national parks. We've had a number of congressional committees out here, and it was always our effort to help them to see the things that they wanted to see and that they'd asked to see. The things we showed them were important in connection with their congressional duty.

We had an agricultural committee one time that was interested in looking at our sustained-yield units and knowing something about them. We took them to Olympia and went over the Shelton Cooperative Sustained-Yield Unit. We took them to Grays Harbor and visited that federal unit. At that time we were thinking about one at Hood River, and we took them to the Hood River area and discussed this.

We had another committee one time that was interested in the Forest Service recreational program. This was the agriculture committee, also. We took them through the Cascades and showed them our management program. We tried to help them to see what things they wanted to see, and we tried to make them as comfortable as we could with the facilities that we had available. All of these committees expressed appreciation of our planning. I always enjoyed those sessions. There were some fine men involved on these congressional committees, and they were really interested in things that we had to show them.

ERM: Do you feel congressmen and senators are well enough informed about the on-the-ground application of national policies?

JHS: I think they should be better informed. When these committees came out, I thought this was a fine effort on their part. The trips were valuable to them, and, I think, the congressmen themselves thought they were. In later years with Congress being in session most of the year there's been less and less time for this sort of thing. We've had some of it all along, but it seemed to me that we had more early in the fifties than we have had in the sixties.

ERM: Was it true, as the lumbermen claimed, that because of the 1897 act the two primary purposes of the national forests were timber and water? Did the Forest Service agree?

JHS: No, the Forest Service did not agree.

ERM: They did not agree. If not, then why did the lumbermen want the 1897 act so protected in the 1960 act?

JHS: I think they felt that the 1897 act did, in effect, give them a certain claim on the national forest resources, but the Forest Service did not think that way. I certainly didn't. The lumbermen all through the legislative history of the Multiple Use Act were trying to maintain their special position for timber. The Forest Service fought this position and was successful in getting equal recognition of all resources in the Multiple Use Act. The reference to the 1897 act merely makes this supplementary to it, I suppose you would say. It clearly says that there is no resource that has status over any other resource.

ERM: Have you ever yourself believed that some uses of national forest lands have priority over other uses?

JHS: No. My feeling has been that all the uses of national forest land must be developed for use in a harmonious pattern.

ERM: None of them have any priority?

JHS: None of them have special priority and never have.

ERM: Do you think that that is an attitude that has been generally felt throughout the service or not?

JHS: I think it's been felt in various degrees by most people. Over the years I've thought in terms of all resources. Those people who have worked in timber, perhaps, might be more inclined to think in terms of timber. There have been people who have said the best multiple-use management is good forest management. In other words, if you manage the timber well, then you're providing good multiple-use management. This is not always true. We first need a long range land-use plan or multiple-use plan. Good resource plans, including timber management, must supplement this land-use plan. Good land use or multiple use does not follow good timber management. The land-use plan must come first.

Equality of the Multiple Uses?

ERM: And here's another loaded one: Were the various uses, timber, recreation, watershed, etc., of equal status in Forest Service administration before the 1960 act? If so, what did equal status mean, equal appropriations, equal time, equal what?

JHS: [Laughter.] When the question is asked, "What does the equal status mean?" I don't know quite how to answer. I don't like the question, but let me approach the matter by an example. In an area that has a beautiful waterfall, the scenery around that waterfall must have overriding consideration in the management that's planned for that area. The land-use or multiple-use plan must prescribe guidelines to safeguard and develop that scenery. Timber harvesting must be directed toward protecting the scenery and facilitating its use. Timber management plans would provide the specifics to accomplish this.

ERM: And, of course, there are some people who would say, "Yes, they all are of equal status, but some are more equal than others."

JHS: [Laughter.]

ERM: Isn't that just about what it boils down to?

JHS: No, I don't think this statement is really very meaningful. It is the kind of statement that has been used to discredit multiple use. All uses are given equal treatment, but this does not mean that all are developed equally everywhere.

ERM: Taking the whole framework and acreage with which the Forest Service is charged, is there equal status for each one of these various uses?

JHS: There should be equal treatment given, and by and large I think there has been.

ERM: Are there ways of measuring whether or not equal consideration is given? You can add up the budgets that are appropriated to each use. You can make statistical studies of the amount of manpower that is invested in each one of these uses. You can look at the amount of research effort that is cranked into each one. These should provide some indication of the relative importance of

each use is in the total policy of the agency.

JHS: If you use such criteria, I think that you end up with a mistaken conclusion. In the early days the money available for timber harvesting was greater than for most any other use. In the thirties there was a great deal of input into recreation through the Civilian Conservation Corps, which was separate from the direct appropriations for these various functions. Also, in more modern times timber sale money has been used to employ biologists, soil scientists, and landscape architects because their advice was needed to make timber sales in harmony with scenery, soils, and wildlife.

ERM: Oh, I realize that looking at it from a historical point of view and going back and measuring over time would be very difficult to do, but I'm just asking the question as of now. As of today, how equal are these things in the allocations of money, time, and talent devoted to each one?

JHS: Well, if you measure this question of equality on this basis, you can't say that all uses are entirely equal because if you look at our ten-year program, the funds that have been made available vary widely. This, by itself in my judgment, is not the right way to measure equal treatment.

PROBLEMS THE FOREST SERVICE FACES TODAY

Freedom within the Forest Service

ERM: Almost all organizations and agencies and even companies have a species that grows from the bottom up that is often called "young turks."

JHS: [Laughter.] Yes.

ERM: Did you have any "young turks" in the Portland office?

JHS: I hope all of my staff were "young turks" in that they were dedicated and that they were free to express their own views. I tried to encourage people to speak frankly regardless of whether their views coincided with my views or not. I think that the only way in which you can really get a solid decision in the long run is to have people speak very frankly and freely. We had a crew that in the main did that. I think there were those who were more ready to express themselves than others, which, I guess, is natural. Some of our forest supervisors were more active in expressing themselves than others.

ERM: Do you think the Forest Service in general provided a good and open forum for its personnel to do just that?

JHS: I think it has. I have never felt any restraint. I have felt on the contrary that people wanted me to express my views, but they also expected me to give some thought to these things before I expressed them. I'm sure it's not good to just talk without having given the matter some thought. I guess we all do talk without thought one time or another, but it's much better to have considered all the aspects of an issue and the impacts of alternative courses of action before reaching a position.

ERM: Well, there's probably always a tendency on the part of young people who are coming up in any organization to feel that they have a bigger, better, and clearer insight into contemporary problems than some of the older heads above them.

JHS: I'm sure there is. I know some of our older supervisors--such as Ken Blair--who have progressive minds. Blair is retired now, but he was one of the older ones. We had a man who retired in 1955 on the Willamette, Ray Bruckart. Now, Ray had some blind spots, but in many respects he was a progressive individual, a progressive thinker. I don't think you can generalize that youth has any greater monopoly on intelligence or ability or an open mind than some of the older people.

ERM: And maybe there's something to be said for the merits of experience and accumulated wisdom.

JHS: Yes, that has some value, but it isn't the only thing. Imaginative and innovative ideas are needed also. Times and conditions change and practices must adjust to changing times.

Threat of Departmental Reorganization

ERM: Was there much rivalry between the Forest Service and the National Park Service during the 1930s as you were getting launched in your career? If so, what caused the rivalry, and how did it affect Forest Service policy? I'm thinking now of the input of the personality of Harold Ickes, for example, and territorial rivalries.

JHS: First, I had no direct contact with the Park Service during the thirties other than one time when I helped arrange a meeting of the Society of American Foresters on Isle Royale. George Bagley was the park superintendent there, a forester, and a member of the society. Our relationships were excellent. We didn't have any problems. Now, I had read about Ickes's desire to get the Forest Service into the Department of the Interior, and I was dead set against it.

I remember one time I had a little time between trains in Chicago and walked to a hotel in which there was a meeting of the Izaak Walton League at which Ickes was on the program. I got there

at the time he was telling the Waltonians that the Forest Service ought to be in his department. Some of the things he said inflamed me. I knew his statements to be incorrect.

I always have been opposed to the Forest Service being moved into the Department of the Interior because I think that history showed the Department of Interior has had policies directed and motivated much more by political expediency than the Department of Agriculture. We've had men as secretary of agriculture who were scientists and who appeared to be more concerned with science and public welfare than the leaders in the Interior Department. So I have felt that it would be a great mistake to move the Forest Service from the Agriculture Department into the Department of the Interior.

Of course, I may be motivated by the knowledge that in the pre-1905 days there was no management being given to the national forests in the Department of Interior, even very little protection. There were no professional people in the Department of the Interior to manage them. Now, this isn't true today. Interior has professional people as well as we do. I don't suppose the sun would stop rising if the Forest Service was moved into the Interior Department, but I think in the long run it would be bad for the country.

Now, we have a new proposal by our present president that would make for substantial changes in the whole governmental structure. The kind of a department of natural resources he proposes might have some merit. I think before a sound judgment can be made the specifics of the proposal need to be known. But if it's a warmed-over Department of Interior, I'm still against it.

ERM: Do you think there's anything really to be gained by creating a new super agency such as that, as opposed to maintaining the variety of agencies that now have responsibilities for managing the public lands?

JHS: I don't know that there's anything to be gained.

ERM: Is it economy?

JHS: The proponents of this, particularly of the Department of Natural Resources, make much of the argument that it would lead to better coordination of natural resource programs. There is always need for improved coordination, but just putting these things in a department of natural resources does not insure this. In a department of natural

resources the heads of different units in the department can be at loggerheads with each other. Unless the kind of leadership that will enthuse people about working together is provided, nothing will be achieved by this kind of an organization. But on the other hand, if there is the right kind of leadership, there can be honest efforts by all agencies to cooperate with other agencies with whom they need to work.

ERM: Do you think the impact of a steadily expanded national park system has had, and may continue to have, influence on the Forest Service's attitude toward recreation on national forests? In other words, has the increased size and number of the national parks caused the Forest Service to slow down and maybe de-emphasize its work in recreation, or do you think it will increase it?

JHS: No, no, I don't think it will have very much influence. I think that the influence on our developmental program arises from the public interest in recreation, and I think we'll develop in this area.

Bitterroot National Forest Crisis

ERM: Herb, I'm going to bring you down pretty close to the present in this question. Were you aware of the issues involved in the controversy regarding multiple use on the Bitterroot National Forest in Montana?

JHS: Only rather superficially. I have read, for example, the article in American Forests on this, and I've talked to some of the people in the Forest Service that know a little bit more about it, but I don't think I'm very well informed on this particular issue.

ERM: How do you account for such a strong criticism of Forest Service management that concludes that multiple use is a figment of somebody's imagination rather than real practice in the Forest Service, especially coming out of a school of forestry?

JHS: Yes. I don't really know what the cause of this is. I have this feeling that, perhaps, in this case there were mistakes made by the Forest Service in some of the cutting practices that were applied.

But whether there actually were or not, I have no solid information that would convince me one way or the other. It seems to me the kind of committee they had was not particularly organized to get the facts but rather to provide something that could be used to criticize or to support already preconceived views that clear cutting wasn't a good thing.

I would be the first to admit that clear cutting may be done wrongly and may leave an area in bad shape. In most cases of poor application of the clear-cutting techniques, the area is not destroyed. Trees may be planted and in some instances this happens naturally. I understand that one of the things that made the area look bad was the number of tractor roads and the location of the roads. It is not good practice to disturb too much soil with a road system in harvesting, whether it's clear cut or otherwise. In this case the timber was clear cut. The large number of roads disturbed a lot of soil, and this soil disturbance was quite conspicuous to people. This wasn't good.

ERM: Do you remember similar studies being conducted by other schools of forestry or committees of investigation out here in Region 6?

JHS: Let's see. We had a committee one time that came out here and looked at the forest management that was being given in this area. This one was chaired by Ken Davis. We had another committee, chaired by Al Worrell, look at our appraisal system.

ERM: Weren't there internal committees of Forest Service people?

JHS: I think there were, although they weren't all Forest Service people. I mean the Forest Service organized these committees and had people from some of the schools as participants.

ERM: What did they generally find? How did they look upon the work that was being done?

JHS: Well, again, my memory is pretty dim on these reports, and I won't attempt to comment upon the appraisal report because that really doesn't relate to the issues we're talking about. But I think in general the committee thought that the forest management techniques being applied were generally pretty good. I presume they probably did identify some things they thought should be given some further study. I think among other things they felt that the research program should be intensified in this area. But these are very dim recollections,

and I just can't speak with any great degree of assurance on their final reports. I know there wasn't anything very substantially wrong.

Service Personnel and Public Controversies

ERM: Was there not some question raised in 1959 or thereabouts over the role of Forest Service research men in public controversy? Was there ever any question as to whether or not the research men should take part in or remain aloof from public controversies?

JHS: The subject has been talked about at various times, and I don't recall any specific issue that brought the matter up. Where this issue is most apt to come up is in the economics of the harvesting of a timber crop, whether, in effect, such things as the even-flow system of management is the proper system to be used. An economist might feel, and I think some of them in the Forest Service research have felt, that we should give more weight to the dollar return of the various alternatives of management in making a choice of the program to follow. Some economists have felt that even-flow wasn't necessarily a good policy to follow because of the lower dollar yield.

In this we never agreed, and I don't think everybody in the station agreed, either. Some felt we ought to overcut in one area to provide substantially greater timber supplies for the industries there. The industries there would have to taper off and move to some other place after those supplies had been cut out. In other words, they would think in terms of a sustained flow of products from both public and private lands, and they wouldn't think in terms of supporting economies of local communities, which was the principle the Forest Service management has been based on for many years and which I always felt was the sound approach in our timber management planning.

ERM: Did Dick McArdle feel that Forest Service research men had been too silent at this time?

JHS: I don't think so. I never heard him make any comments that would lead me to believe that.

ERM: Did you encourage your personnel under you to be involved in public controversies or to stay out of them?

JHS: Our position on public controversies was that we ought to be sure to represent what the facts were regarding any particular issue and that we should state clearly and forcefully the position that we had taken with respect to these issues. We also recognized that if a position had been taken by the administration--either the secretary of agriculture or the president--even though we didn't agree with it we were part of the team and we had to abide by their decisions. While an individual didn't have to agree with them, as long as we were part of the team we couldn't speak out in opposition to their decisions. I feel that's a sound principle of organization and operation. This was the kind of policy that I followed with respect to my own actions. I expected the people on the staff and on the forests to follow the same course.

ERM: Do you think this is a position that causes some people to grumble and growl and perhaps be over critical of their superiors?

JHS: Yes, I suppose it does, but I don't see how you can run any organization without a policy of that sort. Permitting everyone to go off on different tangents will lead to misunderstanding and chaos.

In this region, we had a ranger who was writing a column in a newspaper. This was fine. We urged people to write about forestry activities in newspapers, and particularly I was interested that they write about multiple use and what they were doing. But he started including political commentaries and criticizing some of the high officials in government. Normally, I wouldn't object to such action because these comments did not relate to Forest Service activities.

In this particular case, this man was a ranger in charge of a ranger district. He had the responsibility of equitably and impartially administering the resources of that district in that community. In this particular community there was very sharp division of views on these subjects. There were people in the community that were strongly for the ranger, and those that were strongly against him. Yet he had the job of administering a resource impartially between all these users. In my view, he couldn't do that effectively if he continued this sort of thing.

So the supervisor discussed it with him, and he discussed it with me. I advised him to write his column but write about multiple use. I pointed out that if he wanted to write about Communism we would find some other assignment for him that would not involve him

in line decisions. If he was going to continue as "Mr. Forest Service" in a community where there was sharp division on this matter, he would have to write about other things. He first said he would change his writing and then later suddenly changed his mind and resigned from the Forest Service. But I think you have to remember your responsibilities in an organization and your responsibilities in the position you occupy in the organization.

ERM: Thank you, Herb. It has been a pleasure having these several days to interview in some depth on your memories of a career in public forestry and with particular reference to the history of the multiple-use concept in our national forest policy.

APPENDICES

PACIFIC NORTHWEST REGION - U. S. FOREST SERVICE
REGIONAL HEADQUARTERS, PORTLAND, OREGON

FOREST NEWS

(Information concerning the National Forests and the work of the Forest Service)

RELEASE

R6-118

FOR RELEASE APRIL 17, 1951

J. H. STONE NAMED REGIONAL FORESTER - Served from 1951 - 6/67.

J. Herbert Stone of Atlanta, regional forester for the Forest Service in the Southern Region, has been appointed regional forester of the Pacific Northwest Region with headquarters in Portland, Oregon, Lyle F. Watts, Chief, U. S. Forest Service, announced in Washington, D. C., today.

Stone will fill the vacancy created by the death of Horace J. Andrews, who was killed in an automobile accident on March 24 while attending a foresters' conference in Washington, D. C.

In announcing the appointment, Mr. Watts stated that Stone is eminently qualified to serve in the big timber country of Washington and Oregon. National forests of the Southern Region, administered by Stone since April 15, 1946, rank second only to the Pacific Northwest Region as a producer of timber stumpage. It is not known when Stone will arrive in Portland. Because of the importance of his new job Stone will assume his new position as soon as possible.

From 1936 to 1945 Stone directed timber management projects in the Forest Service's regional office in Milwaukee. There he served successively as assistant head of the Division of Timber Management, head of the Section of Private Forest Management and director of a wartime timber production project. In the last assignment, he planned and directed a program designed to increase log and lumber production for wartime needs.

This extensive experience in timber management will be of tremendous value to Stone in his new assignment, Watts said. The Pacific Northwest Region contains 39 percent of all the timber of sawlog size in the United States. Timber sold

from national forests of this region in 1950 brought receipts of $19,733,396, or nearly half the total national forest timber receipts of $40,527,935..

Following his work in Milwaukee, Stone served for a short time as director of the Central States Forest and Range Experiment Station in Columbus, O. He was then transferred to Atlanta as regional forester.

Stone entered the Forest Service July 1, 1927, as a forest ranger on the Allegheny National Forest, at Warren, Pa. He left the Allegheny Forest in June 1929 and served successively as junior forester, assistant forest supervisor and forest supervisor, on several forests.

In addition to his knowledge of forestry in this country, Stone has a grasp of worldwide forest problems. He attended the Third World Forestry Congress held in Helsinki, Finland, in 1949 as a representative of the Forest Service.

Stone was born in New Haven, Conn. He received a master's degree in forestry from Yale University in 1927.

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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.)

8010-104

UNITED STATES GOVERNMENT

Memorandum

U. S. Forest Service
P. O. Box 3623
Portland 8, Oregon

TO : Chief

File No. 1440

FROM : J. Herbert Stone, Regional Forester

Date: January 10, 1963

SUBJECT: Inspection, GII (Region 6 and PNW Station, 1958)

Your reference: 4/5/62

Following is our final progress report:

Recommendation No. 3. I am listing some items that illustrate our recent efforts to pave the way for better public understanding of National Forest problems and activities:

a. Developed and executed an I&E plan for the "High Mountain Policy" to inform forest officers and public of the objectives and policies used in the new approach for coordinated multiple use management. Favorable press coverage and public acceptance.

b. Developed and distributed fact sheet to forest officers, summarizing the objectives and policies for the management of the high mountain areas of the National Forests.

c. Developed and distributed a brochure to selected public groups entitled "Management Objectives and Policies for the High Mountain Areas of National Forests of the Pacific Northwest Region."

d. Regional Forester conducted in-Service training for Forest Supervisors and Timber Management officers on landscape management practices. Forests have conducted similar training field trips.

e. A two-day in-Service training school for west-side TM staff and RO personnel on intermediate cutting and second-growth management practices.

f. Two fact sheets distributed to explain salient aspects of timber management objectives and policies. Six fact sheets covering timber management activities are in rough draft and have been assigned top priority for completion. Information sheets are distributed periodically to field and selected key people to inform them of timber situation developments.

g. Study and reclassification brochures were developed and distributed to key men for the North Cascade and Mt. Jefferson Primitive Areas. Special information sheets were prepared for Waldo Lake and Minam River Areas. In addition, assisted in development of the Tri-Region (1, 4, 6) plan for Hells Canyon - Seven Devils Recreation Area, including brochure to be printed by Washington Office this fall.

h. "Multiple Use Highlights for 1961" brochure illustrates principal accomplishments and management practices of the Region during the year in its long-term aims to serve the people and the nation.

i. A majority of the forests have prepared one or more multiple use brochures for public distribution, edited in this office. Continuing to publish special recreation, wild and wilderness brochures for specific areas.

j. Increased press contacts in the form of feature articles, or material for them, on National Forest resources and users made available to various writers with newspapers, magazines and house publications. Press releases and features aimed at balanced coverage of all resources as the over-all multiple use theme. Conducted special show-me trip for press representatives for Columbus Day blowdown damage. Eight special TV interviews with Regional Office personnel.

k. Nine National Forest, one Regional, and one special Waldo Lake Advisory Councils, and eight grazing advisory boards, are now active. Members of the Advisory Councils represent a cross section of key people throughout the Region. We are moving ahead to establish multiple use councils on forests that do not now have them.

l. Visitor Centers at Lava Butte, Timberline Lodge, and Multnomah Falls now in operation to interpret the land and history to the forest visitor. Interpretive signs, unattended displays, nature trails, self-guided tours and brochures are being developed throughout the Region to explain the forest and resources in layman language to the visitor.

m. Held special staff meetings with Assistant Regional Foresters and Station Director to discuss forest management practices to achieve a greater degree of coordination with Forest Service administration and research conclusions.

n. Other activities gaining regionwide favorable publicity were:

(1) Secretary Freeman's Land and People Conference, stressing need to extend multiple use management as practiced by the Forest Service to private lands. Included three TV appearances by the Secretary.

(2) Columbus Day Windstorm Damage Conference at Portland, Oregon.

(3) Walter H. Lund, Chief of Timber Management, address this fall to the Portland Chapter, Izaak Walton League, dealing with current aspects of the timber situation.

(4) Secretary Freeman's talk to the Western Pine Association meeting in Portland last September.

(5) Conference on High Mountain Policy at Timberline Lodge, sponsored by Reed College.

o. Governor Rosellini recently appointed a 21-member Washington Forest Area Use Council to serve as a study and advisory group on uses of forested and mountainous areas of the state. The council was organized as a joint effort of the Governor and Bert Cole, and will have three primary objectives:

(1) To study and analyze facts and conditions concerning the present and potential uses of publicly owned forested and mountainous areas in the state.

(2) To develop conclusions and recommendations with respect to the highest and best uses of these areas to provide the greatest social and economic benefits to the people of the state.

(3) To advise and inform the Governor and other public officials as well as citizens of the state of the council findings, conclusions, and recommendations.

We will keep this group informed of our plans and programs and will fully consider both their informal and formal suggestions and recommendations.

p. Governor Hatfield recently appointed a 25-member Oregon Outdoor Recreation Council. Richard M. Bowe of our Division of Recreation is a member. This council will augment the recreation coordinating responsibility assigned to the Committee on Natural Resources of which the Governor is chairman. We shall continue to work with these groups as well as others to obtain a better public understanding of National Forest problems and activities.

Recommendation No. 13. We are continuing to place emphasis on the preparation and execution by Forest Supervisors of realistic timber sales programs. Forest Supervisors now furnish me with pertinent progress data as a part of this Region's quarterly accomplishment report. Rangers are doing this for the Supervisor. I believe that this program now fully complies with the inspection recommendation.

Recommendation No. 16. To June 7, 1962, we have seeded and mulched 11.6 miles of roadside cutbanks on the Windigo Pass timber sale area. This is all of the road that had been finished to standard at that time. More of this work is being done as roads are completed. We are continuing to examine carefully the sale area for evidence of actual or potential excessive soil movement. Special measures are being taken in places where we expect erosion to be a problem. As an example, all roads are water-barred each fall when logging activities cease for the winter. Erosion to date on the Windigo Pass sale area has been held below the average amount that is occurring on cutting units on the Umpqua. We will continue our efforts to prevent excessive movement of soil on this particular sale area and in all other activities on National Forest land.

We share your concern about our regeneration failures on the Windigo Pass sale area. To bring you up to date on progress, we report that all area cut and prepared for reforestation has been spot-seeded or planted. We are now up to date with this work, including previously failed areas.

We are not saying that the cutover area is now satisfactorily stocked. It is not. Most of the areas treated prior to 1961 failed and have had to be re-treated. As of this past fall the spot seedings made in the fall of 1961 looked good. These areas, as well as the areas spot-seeded in 1962, were all poison-baited this fall for rodent control. This was done because most of the earlier seedlings that were on the area before snowfall in 1961 were missing when the snow went off this spring. Clipping by rodents seemed to be the cause of loss. Caging studies to check on rodent damage have also been initiated.

In June 1962, the silviculture being applied on the area was reviewed on the ground with the District Ranger, Supervisor, and their assistants by the Regional Office and Pacific Northwest Experiment Station specialists. As a result of this field review and the earlier failures of both natural and artificial reforestation, cutting practices have been materially revised. We are now providing for maximum preservation of existing reproduction and good growing stock.

We will continue to give close attention to the silvicultural practices on this area.

Recommendation No. 18. We have strengthened technical direction in the planning and implementing of the regeneration program on those forests where this phase of our work was not already being planned and directed by professional foresters with adequate attention by line officers. We have insisted that rangers give their personal attention to the planning and execution of their districts' regeneration effort.

The pattern of organization and responsibility generally is now as follows:

a. On forests or districts with a heavy reforestation workload, regeneration activities involving technical accuracy, planning, and decisions are handled by professional foresters. The technical forester assigned to this work reports to a Ranger's resource assistant who reviews plans and technical details. District Rangers review plans and make final decisions, and keep in close contact with the actual regeneration job to insure a competent professional job is accomplished. Appropriate inspection, functional supervision, and training are provided by the Supervisor and his staff assistants.

b. On forests with medium and lighter workloads, district reforestation plans are made by the TMA or by a professional forester under his direction after consultation by the TMA with the Ranger. These plans are approved by the Ranger and then submitted to the Supervisor. These forests now have professional foresters as full-time assistants to the timber staff officer. One of his principal duties is to review all district reforestation plans. He assists the Ranger and TMA as necessary to assure that plans are adequate. He also spends much time in the field on functional supervision or training.

On both heavy and light units, competent nonprofessional personnel are often used as project work foremen or as contracting officer's representative on contract jobs. In all cases, these men work under supervision of professional foresters.

It is our opinion that we are much more adequate now than at the time of the inspection in regard to technical direction in the planning and execution of our regeneration program. Adding another staff in this office has assisted with the necessary additional training.

Recommendation No. 21. We have been working with the State Foresters toward improvement in State CFM training and inspection procedures. Considerable improvement is shown by the fact that the State of Washington has planned and carried out a complete project inspection in CY 1962 without the help of the Forest Service. The farm foresters in both states are integrated with other State personnel in their overall training program. Training of the farm foresters in specific phases of CFM work is carried out periodically by both states. Further improvement is still desirable, but both states now recognize and accept their responsibility in the CFM training and inspection work to a greater degree.

Recommendations Nos. 26 and 27. The vacancies which developed in our land exchange branch in this office have been filled with individuals which we consider well qualified to provide the needed skills to conduct our adjustments work at a high level. Additionally, we have also instituted the following actions in support of and to strengthen our land exchange work:

a. Directives issuances.

b. Reorganization of work and additional staffing on several forests.

c. A stepped-up training program in land adjustments work at both the RO and field levels.

d. An intensification in service, inspection, and review by this office.

Recommendation No. 28. We developed a 3-day formal training course in soil and water protection requirements, and since February 1962, there has been a full schedule of training at the forest level. Jack Fisher and Dr. John Corliss, Soil Scientists of our Division of Watershed Management, have conducted this training. To date this course has been given on nine forests to about 20 key TMA and engineering personnel on each. In 1963 seven additional forests are scheduled for this training and the balance in 1964. We plan to repeat this or a similar session on each forest at 2- to 3-year intervals. This training has been effective in getting technically sound management practices adopted on the job.

As an example of effective work in this field, we cite the current supervision of the Packwood Hydroelectric Project by E. L. Dyson by assignment from his position as forest engineer on the Gifford Pinchot as evidence of the gains we have made in controlling and reducing the adverse impacts of such construction. The Packwood project involves even more critical soil and water values than were encountered on the Copco project. In the face of divergent objectives of the developer, including his contractor, and the Forest Service, we believe our control of project activities has been reasonable and adequate to protect soil and water. We plan to use this project as a training site by scheduling show-me trips for applicable forest officers to assist in retaining the gains made here for application to other projects.

Recommendations Nos. 33-35. We certainly agree that recent developments in the field of access procurement have changed the nature of this work and that these developments call for more than the usual

amount of attention in the immediate future. We also anticipate that further important and significant developments will occur in this field and that they, too, will require considerable attention and the application of expertness and skill at all levels within the organization and in our dealings with other agencies, landowners, industry, and the using public in order that suitable access, coordinated with need and development programs, may be provided for the National Forests. Our accomplishments and progress, we believe, attest to our awareness of the situation and our recognition of the need for continued and critical attention to this activity.

J. Herbert Stone

xc: Chief (5)
cc: PNW (2)
Division Chiefs
Umpqua (2)

MULTIPLE USE--WHAT IS IT?
HOW IS IT APPLIED IN REGION 6?

Presented by J. Herbert Stone, Regional Forester, U.S. Forest Service, at Symposium, Green River Community College, Auburn, Washington, October 17, 1966

Multiple use is a means whereby man, with nature's help, can meet the challenge of the future. The forest is an important part of our landscape in the Pacific Northwest. It is more than that. It is a community of plants, animals, soil, and water. This community combined with its geology provides many values to mankind, and also the individual elements of the total community are very close and inseparably related. The treatment of one element may have far-reaching effect on the other elements.

For example, the hoofs of animals trample the soil and have a compacting effect upon it. This may affect water infiltration rate, runoff, tree growth, and water quality. An experiment carried out on the Coweeta Experimental Forest in North Carolina point up how harmful excessive soil compaction can be to the forest community. Six head of livestock were placed on a 145-acre watershed and in eight weeks time water infiltration was reduced to 1/11th of its former rate. Over a period of years, overland flow began to appear. The runoff changed in the streams, becoming much higher after rains and lower in the dry periods.

The sediment in the water began to rise and, over a 5-year period, the growth of the yellow poplar trees on sample plots showed a 22% reduction in growth over the same trees in check plots.

A reduction in soil depth, whether it comes by geologic erosion or as a result of man's activities can reduce the capacity of the soil reservoir. This moisture reduction leads to a condition where trees, shrubs, or even grass find it difficult to grow. This situation may lead to a reduction in the amount of forage available to livestock and wildlife.

These examples may serve to illustrate the close and inseparable interrelationships which are involved and must be considered in any management program. Into this situation comes man, and he also becomes a factor. He has growing and varied needs and a healthy properly managed forest community can serve him.

Man needs and wants timber. Here in the Pacific Northwest timber is an important crop of the forest community. It provides materials for a growing nation; it provides employment and income to many people. Timber supplies here are sought widely. The pressures today are upon our National Forests to supply this raw material at the full extent of the allowable cut. There is even pressure to accelerate allowable cuts in order to meet these needs.

Our growing population also seeks more in the way of recreation in the out-of-doors. This recreation takes many forms.

Some people prefer hiking and camping in areas of wilderness. They want to get off the road and back on the trails where they can get away from our mechanized civilization. Others want to get into the forest, but want to use more modern means to get there, such as motor bikes or jeeps or automobiles. Some people use all types of transportation to get to places which they enjoy. There are those who want to water ski, those who want to snow ski, and still others who just want to drive along roads through the forests to see a pretty landscape or visit some outstanding bit of scenery. As the population grows, the number of people who are seeking hunting and fishing recreation also grows.

Water continues to be one of the more important resources of this forest community for irrigation, for domestic use, and for industrial use. The mountain streams are being harnessed at a rapid rate to provide irrigation, electricity, and some measure of flood control for the populations lower down. Water is an important element in recreation and in the life cycle of anadromous fish. People become concerned when the water becomes muddy. Silted streams do not give the same thrill to a fisherman that a clear mountain stream does. It is difficult for spawning beds to be maintained in a satisfactory condition for the spawning of the anadromous fish when a silt layer is deposited on the gravel bed.

How Can These Needs Be Met?

So we have a forest community, with its various parts inseparably related; and we have man, with his great and growing needs for all of the elements of this community.

It would be simple if there were enough of this forest community to set aside a portion of it to serve each of the major needs of man. But there just is not enough land to do that and, with the growing population, the per capita acreage of forest community will become less.

Furthermore, apart from the lack of enough land, the inseparable relationship of resources and the widely varied situations that are found within short distances do not permit this kind of organization of the forest to serve the needs of men. The forests east of the Cascade Mountains grow ponderosa pine and along with it there are various amounts of bitterbrush and grass. Because these naturally grow together the areas can be used for wood as well as for domestic livestock, deer, elk, and other wild game. On the west side of the Cascades we have streams flowing through thick forests of Douglas-fir, hemlock, and true firs, with countless lakes and beauty spots scattered through the forests. Timber in these areas must and can be harvested so that the adverse effect on water and on recreation is minimized. We have many examples of this throughout the Region. I think of the Clackamas River drainage on the Mt. Hood National Forest, which supports an annual cut of about 200 million board feet of timber and yet the beauty of the Clackamas Valley continues to inspire people and attract many thousands of recreationists every year.

Some areas, like wilderness for example, do not admit roads or mechanized equipment within them. But interrelationships still exist here and will require some degree of management over the years to maintain the wilderness value for which they are established.

I refer particularly to the trampling effect of hikers, campers, and their livestock on the delicate plants and soils within them.

Planning Needed for Sound Management

Careful land management planning is necessary in order to design a type of management which can supply the needs of man in harmony with the environment. This planning involves an inventory not only of timber, but of water, of wildlife, of soil conditions, of range, of human leisure recreation needs. All of this information is necessary to identify those modifications of one use which may be needed in order to provide a workable combination of use which will, in the long run, contribute best to the sum total of human needs. The manager must know whether the soil is deep or shallow, whether it is warm or cold, whether the aspect leads to high surface temperature, what the population of rodents is, what the nature and texture of the soil are, etc., in order to plan for a workable combination of uses. Management which recognizes the variability of these factors from one acre to the next must be the order of the future.

This planning must take into consideration the economics involved in the various alternatives as well as the thinking of the general public with respect to these matters. This is what we call "multiple use planning."

Multiple Use Application

The application of multiple use must start with the recognition of the situation with which we have to work.

In our planning we recognize four different resource associations or management zones, and there are, of course, many other individual situations within these zones. The resource associations which are recognized are: first, the Grass Shrub Association of Eastern Oregon, which is typified by sagebrush, juniper, and grasses of various sorts. The next association is the Principal Forest, which on the east side of the Cascades is made up of ponderosa pine and some lodgepole pine, and on the west side of Douglas-fir, western hemlock, and a scattering of other species such as cedar and true firs. Third, the Upper Forest Resource Association is typified by the true firs and the mountain hemlock. These lands lie at higher elevations and frequently embrace large numbers of lakes. Some of the most difficult multiple use decisions occur in this area. The fourth association is the Alpine Resource Association, which is typified by the alpine fir in scattered patches, mountain meadows, delicate eroding soil, mountain peaks, glaciers and rocks. Across all of these resource associations, recognizing and embracing areas of special beauty, are those areas where landscape factors are important in considering and designing management. These are called Landscape Management Units. Also, we have developed a High Mountain Policy which identifies recreation as the key use in these areas. The high mountain area embraces all of the Alpine Resource Association and the landscape management portion of the Upper Resource Association.

Basic principles for applying multiple use in all of these resource associations are set forth in guidelines to the forest managers.

These guides provide management direction and insure protection in the varied situations with which we are faced. Just as an example, the following quotation from the basic guides which give the management direction applying to all resource zones will give you some idea of the nature of these instructions:

"Management Direction Applying to all Resource Associations or Zones. The following three Regional directives are overriding in all resource management activities. They are derived from the Multiple Use-Sustained Yield Act which directs the management of National Forests without impairment of the productivity of the land. Application of all objectives for the individual resource management zones must conform with these considerations:

a. Soil is a basic element in National Forest management. Management of all resources will be planned to keep soil in place; to maintain and/or improve its ability to absorb and store rainfall; and to produce plant growth. Practices that improve present soil conditions will be given preference.

b. Land and resource uses necessary to support an economic activity often cause soil dislocation and have adverse effects on watershed values. Such dislocations will be held to a minimum with preventive or corrective measures being specified and applied. Soil rehabilitation measures will be taken promptly where needed. In potential soil problem areas, the effect of projected uses will be evaluated by soil technicians.

This information will be used by the line officers in applied management.

c. Water is also a basic resource because of its inseparable relationship to soil values and the productivity of land. It will be given primary consideration by managers to provide optimum yield of usable water in stable streamflow or subsurface supply. This will be done by maintaining the hydrologic balance between soil, water, and plants, to obtain the best possible performance of the watershed. The quality of water will be restored, maintained, or improved by reducing sediment content through preserving stability of soil on watershed slopes and along stream channels. The purity, temperature, color, and taste of water will be maintained or improved to the extent that these qualities can be controlled on the land. Water yields and seasonal distribution of flow will be maintained or improved to the extent practicable."

Specific plans in light of these general directives are prepared on each Ranger District; a sample of multiple use plans for the Twisp Ranger District on the Okanogan Forest and the Entiat District on the Wenatchee are presented here. (Explain plans)

This key document then provides the guide for the man who lays out a timber sale, plans a transportation system, and makes an impact review of a dam proposal or road development project, or who plans a recreation area development.

The man who is preparing a timber sale packet must see that protective clauses are included in the contract to insure the protection of some scenery or of a spawning bed. The man on the ground must provide for the proper disposal of logging debris to not only safeguard an area from fire but to make it attractive if it is in a Landscape Management Area. The man on the ground must see that powerlines avoid wilderness areas or recreational points. He must see that they are combined with other transmission lines where practicable to minimize the impact on the timber supply.

And, finally, the man on the ground must see that these provisions are actually applied on the ground. He must see that the contractors follow these specifications and that a good job is done. Actually, the application of multiple use must come down to acre-by-acre analysis and planning if we are to build these plans and to make them in harmony with nature itself.

Multiple use has been the policy of the Forest Service for 60 years and law for six years. Most recently we have been faced with growing demands on the forests which have created new problems or intensified old ones. The intensive and varied uses bring new situations. We have made real progress in designing appropriate planning methods and practices and applying them. Although there is still much to be learned and improvement in application needed, we are now getting to a considerable degree the kind of coordinated use which present day situations require.

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Stone makes recommendations for the future of the North Cascades.

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.

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_____. "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.

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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.

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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 SouthernRegion.

_____. "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, Virlis 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.

Glascock, 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."

_____. "Multiple Use Bills Receive Hearings." American Forests 66, no. 4 (April 1960): 9-10.

_____. "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 natio al

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 aesthetic 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.

Zivnuska discusses California and the changes in the land brought on by emigration, the gold rush, timber cutting, and sheep grazing.

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