Gordon Robinson

FORESTRY CONSULTANT
TO
THE SIERRA CLUB

An Interview Conducted by
Harold K. Steen

Sierra Club History Committee
San Francisco, California

1979

TABLE OF CONTENTS

FOREWORD

> . . . the human ego . . . learns that the world, supposedly made for its enjoyment, has existed for untold eons entirely indifferent to its coming. The chill vapors of time and space are beginning to filter under the closed door of the human intellect.
>
> --Loren Eiseley

Gordon Robinson, the door of whose intellect has remained a bit ajar, is the man Les Pengelly would cast in the role of forest reformer. It is Les, Montanan and current president of the Wildlife Society, who said "selective logging means you select a mountain and you log it" and who described Smokey the Bear as Anthropomorphous ursinity.

It was providential that the Sierra Club was ready for Gordon Robinson when he was ready for it. It will also be providential when the day comes, as it will, when a stultified profession--which vies with economics for the title of the Dismal Science--lets some of his light into its thinking. On the day this happens, a fresh breeze will blow, and the decrepit, old-growth, snag-topped, widow-maker trees will wave gracefully in it. They got where they are, as their countless generations of ancestors did, and as their progeny still may, because their DNA knows what forestry schools don't teach. The trees got here somehow, unaided by foresters, and we are grateful.

These lines of appreciation for Gordon are inflammatory and are meant to be so. Conventional Wisdom Sawlog Forestry requires that they be written, explained, underlined, and reiterated. It is hard to imagine any other profession that has been traveling so long and covered so little distance. Forests, of all resources, should inspire long-range thinking. Forests should nurture, in forest stewards, a forest ethic, a system of taboos, if need be, ensuring that forests be considered a trust, not an opportunity to cut and get out, leaving the carnage artfully disguised. The forestry profession might have been custodians of the conservation ethic, but although they heard the advice of a few greats--Aldo Leopold among them--they speedily dismissed it.

These are angry lines perhaps in part because they are written just after a brief flight over the ecological nonsense of vast and ever-expanding clearcuts on steep slopes in Washington's North Cascades. They also follow close on the latest in a long series of challenges to timber engineers to be responsible in their work. The challenge, which I have made year after year, is for someone in the Forest Service, in forestry schools, or in forest industries to reveal what, if any, comprehensive research they are carrying out on the effects of forest monoculture--of infectious monoculturosis. There has been no response to plea after plea that someone would at long last say if the profession was indeed studying the matter--evaluating the dangers to the U.S. forests that monoculture poses, or doesn't pose if I am wrong and natural systems are only in the way. That silence bodes ill for the hopes of anyone who believes that future generations deserve forests as fine as ours were when I started looking at them sixty years ago, before they were as plagued by insensitive forest practices as they are now--practices in wanton violation of public trust.

Apparently the foresters in the Service, the graduate schools, and the industry are not curious about the long-range effects of monoculture, but Gordon Robinson is. He has been looking into it; but it is a lonely vigil.

For his vigilance, for his honesty, for his willingness to speak out, for his demand that excellent forestry be substituted for shabby forestry, we can be grateful, and so can the trees. But he should not be so lonely in his work. We can pray that his vision and persistence will bring about a new generation of foresters, prepared to realize that they have done enough harm already, and with enough Robinsonian courage to travel a new, gentler path, not the old swath through American forests.

David R. Brower
April 1979

PREFACE

Gordon Robinson has "the courage of his convictions." A kind, friendly man, he nonetheless tells his story in a forthright, let-the-chips-fall-where-they-may fashion. Expressive and articulate, his sentences flow readily into paragraphs interrupted by spontaneous laughter and punctuated with booming exclamations and introspective near-whispers. The interviewer's job was easy; turn on the recorder and keep still, except for an occasional nudge of Gordon's memory.

This interview with Gordon Robinson tells us much of the man--and of the Sierra Club. It describes events, explains issues, and offers insights into important personalities. It also points to the club's Robinson-like self-confidence, for its history committee has been given the charge to "tell it like it was." This institutional history program is clearly the best supported by any conservation group in the nation.

The interview was conducted in three sessions spotted over a year. The first session took place in the television studio of the University of California, Santa Cruz, on September 20, 1977. Both of us were a bit intimidated by the sterile surroundings, bright lights, and time constraints--sixty scheduled minutes ran into seventy--and we weren't well acquainted. We soon became immersed in the topics at hand, however, and the session went well.

The goal of making the video session complete in itself required framing questions that would produce a cross section of Gordon's substantial impacts on conservation affairs. For the sake of overall continuity, therefore, the first session has been woven into the other two. The video tape is part of the historical record and is held by the Forest History Society, Santa Cruz, California.

The second session on February 10, 1978, took place in the Robinson home in Tiburon, a half hour north of San Francisco. Rambling architecture typical of postwar, suburban California fronts on a quiet street and overlooks a comfortable yard--patio, lawn, vegetable garden, flowers, fruit trees. Sitting at the dining-room table with the tape recorder between us, we could watch his neighbor's pet chickens hop the back fence to hunt snails and bugs--natural pest removers, Gordon would comment. Paintings,

sculpture, books, and guitars were in ample evidence from room to room, and lunch was Gordon's homemade leek soup. A pleasant day and a substantive session.

Back in Santa Cruz for the final taping on October 3, 1978, we sat this time at my dining-room table. By now we were fast friends and fully relaxed--too relaxed, some will feel, because I broke the rules of oral history time and again by interjecting opinions and swapping stories. Supposedly this was to be Gordon's interview. The editorial process allows interviewers ample opportunity to cover up their transgressions, as I strongly suspect that many do, but for the sake of clearly presenting the terrain surrounding Gordon's answers, my bits of vanity remain. It was still a good session.

The Texas lawsuit to prevent Forest Service clearcuts, a hot topic that was evolving during all three sessions, is covered in Chapter 6. We picked up the thread each time and brought the story up to date. Merging the three bits into one chapter might have been smoother had all verbs been edited into agreeing tenses. Instead, the two major segments remain intact, and are dated on pages 85 and 99 to aid the reader.

The matter of editing deserves comment, for there are schools of thought. The text has been edited as lightly as possible to retain spontaneity, one of the most valuable ingredients of an interview. Gordon's opinions, recollections, and interpretations are presented in a conversational format, to the extent that the written word can imperfectly convey. He is an accomplished author, and had he written this account, syntax and substance would undoubtedly differ. But this difference is precisely the point; an oral interview is just that, and the reader should use it accordingly. For the record, Gordon made almost no changes in the transcript, except to add an occasional clarifying phrase or to correct the transcriber's infrequent errors. As already noted, Gordon Robinson has the courage of his convictions, and he stands by what he says.

This very quality of self-assurance dominates Gordon's comments and explains, at least in part, how he has secured a place for himself in the history of conservation. Compact in stature but full-sized in force of personality, he has stood toe to toe with bevies of experts who espoused contrary views. And if a side backed down, it was not Gordon's.

A David and Goliath comparison is a bit too slick, but apt nonetheless. The simile works well for the Sierra Club, too, where a fraction of 1 percent of our population

tugs, with vengeance it must seem to some, at the nation's drifting resource policies. Gordon was a natural choice to be the club's consultant, after it became clear that technical expertise was needed to bolster its forestry tactics.

Gordon's affection for David Brower, admiration for Edgar Wayburn, and respect for Michael McCloskey link him closely to these three giants of recent Sierra Club history. That a forester, following nearly three decades of employment in the private sector, would become an intimate to the club's inner circles speaks to Gordon's commitment of purpose and to the organization's pragmatism. What seems at first glance to have been a strange alliance quickly becomes an obvious team--loosely coordinated at times--fielding stars that are able to work together to achieve common goals. These goals have been of great importance to Gordon, but his often successful efforts to reach them are only partial justification for this interview. A document as personal as this one can be fully warranted only if the man himself merits it--and Gordon does.

Harold K. Steen
April 1979

EARLY LIFE AND GROWTH OF A PERSONAL PHILOSOPHY

Harold Steen: Let's go back to where you were born; time, place, and date.

Gordon Robinson: I was born in Vancouver, British Columbia, in 1911. My parents were American citizens, but my father was an engineer, and he was living there at the time. My mother died when I was five.

I had a stepmother who was an Englishwoman, a very strict disciplinarian. We had some major battles when I was very small. I remember one in particular. She insisted that I had to be baptized in the Church of England or I would never go to heaven. So she dragged me, kicking and screaming, to be baptized in this church.

They insisted in putting a lace frock on me, which was terribly embarrassing. I remember I bit the preacher, but he went through the ceremony and baptized me in the name of the Father and the Son and the Holy Ghost. [Laughs] I'm surprised he didn't say, "You little son-of-a-bitch!" [Laughter] He probably did under his breath.

They insisted on me going to their dumb Sunday School, too, and she gave me a little card with a picture of Jesus on it, with his flowing robes and halo and all this stuff, and it said at the bottom, "Suffer, little children, to come unto me." I remember asking my stepmother why they wanted little children to suffer. She thought I misinterpreted it, but she was quite wrong.

But anyhow, we got off to that kind of start. Fortunately, she died about two years later. [Laughs] So from there on, I--well, I was always pretty independent, but I had to fight my way, pretty much. My next stepmother was an Irish Catholic woman.

Of course, I was a child of the forest up there. Our house in Vancouver was on two and a half acres that my father had bought, virgin forest about halfway from Vancouver, to New Westminster. They cleared one acre and built a house on it.

Steen: What was his occupation?

Robinson: He was an engineer. He was chief engineer for the B.C. Electric at that time, which is the Vancouver equivalent of the PG&E here. He went into business for himself and failed during the First World War. That resulted in us moving down here.

Steen: He was a college-trained engineer?

Robinson: Yes. He went to Boston Tech, which later became MIT. Then he got a master's degree at Union University in Schenectady. It was a combination of electrical and hydraulic engineering. He was a very bright, philosophical guy, pretty inept at handling family and financial affairs, but a very good guy.

Steen: In the move to Berkeley, he apparently changed his job.

Robinson: Yes. He went to work for the PG&E down here, building powerhouses and a batch of new substations under construction in the early twenties. He worked with those.

But I was going to tell you about the trip to California. We came by ship. At that time, I thought the whole world was forest. I'd heard of the prairies, but I figured that that's where the trees just weren't so big. My stepbrother, who was my age, and I thought that California was the land of plenty. We thought that it was a tropical jungle. I remember asking my stepmother, "I guess nobody has to work in California unless they want to, do they?" I don't know what her reply was, but it wouldn't have made any difference. [Laughs] This was our illusion, and we weren't going to let go of it.

We imagined that it was full of bananas and monkeys and coconuts and breadfruit and all these things. We could just pick fruit out of the trees to live on. [Laughter]

We had to go into Astoria to ride out a storm, so we were somewhat late getting to San Francisco. When we finally arrived, we kept asking one of the deckhands when we were coming into the harbor, and he said, "Six a.m. we go through the Golden Gate." "Well, why can't we go in earlier?" "Well, because we have to wait for two angels to come down and open the Golden Gate."

Well, we didn't believe him, you know. But just in case, we were out on deck at five o'clock to make sure we didn't miss anything. [Laughter] But as we got in close to the headlands, my gosh, there were no trees! It was September, I recall, and it was all dry. We were absolutely stunned. So from there on, my brother and I--every weekend we'd go for a hike. We'd see a grove of eucalyptus trees someplace, and we'd hike, take a lunch, and go for miles and find them all in straight rows and be disgusted, get poison oak, go home. I always wanted to get back to the forest.

As I mentioned, my stepmother was Catholic, and so she believed she was under obligation to send her kids to a Catholic school, but they told me I was free to go to public school if I wanted to.

Steen: But you had been baptized, after all?

Robinson: But I didn't have a Catholic baptism, so that didn't count for her. [Laughs] Well, I decided that in the interest of family unity, I would go to the school with them. I just thought it would help make this family merge. We hadn't been very successful up to that point. Somewhere along the line, I became converted to Catholicism. I'm more ashamed of that than anything that I ever did in my life.

Steen: It doesn't seem consistent that they would have nabbed you.

Robinson: I know. I'm really ashamed that I let anybody persuade me with all that stuff, but I did. Anyhow, they had to baptize me all over again, because the first one was not legitimate. [Laughs] I remember my father was quite angry, though. He was overwhelmed.

A few years later, I left home in this quarrel over religion. I reasoned my way out of the Church--whatever other complications is more than you want to hear about, I guess. Oh, well, I'll tell you. We lost our house. My father lost his job in 1928, I guess it was. We were buying a house and furniture and a car and all this, a washing machine, on the installment plan, you know. So they came and got all that stuff. My father got a job in South America some place. We moved up to central Oregon, to a forty-acre tract that my stepmother had acquired, her former husband had gotten on a bad debt somehow. So I took charge of the situation, to move up there.

We went down to Richmond and looked at used cars. I selected a 1916 Oldsmobile touring car. I had been working after school in a garage, and I knew something about tuning automobiles and stuff. So I took this down to the garage where I worked and put in new plugs and breaker points and we bought five recaps for two dollars and a half apiece, so the whole thing came to fifty bucks.

Then we made three piles of our earthly belongings--one, the essentials; and one, the non-essentials, and then one pile of things that we would like to keep if there was room for them. So we loaded the car with the essentials, and we got on all of the keepsakes, and I thought we still had room, so we went back through the other [laughs] to pick out things that we wanted, loaded the car, and took off for Oregon.

It took us two days to drive up there, and we just abandoned the house.

Steen: What was the highway then?

Robinson: It was 99. They had just completed it. We went up from Klamath Falls to Bend, and then went up--I believe it was a dirt road from Klamath Falls to Bend, but it was paved to Klamath Falls. We went to Ashland and over the hill. The road through Weed wasn't in yet.

So we found a local person to build a one-room house, of boards and bats for the family, and when I saw that they were okay, I left and went to San Francisco and got a job with the telephone company.

Steen: What was your age?

Robinson: Sixteen. I was working as a--what do you call it? I was a messenger in the mailroom at 140 New Montgomery Street. The boss was an old Irish Catholic woman, Mrs. Mousang, and somehow she found out about everybody's religion, and all of the kids that had a Catholic background had to go to mass or else we could get no advancement in the telephone company! Those people are terrible. [Chuckles]

Well, we fought about that. She also threatened me with the law. The law required that anybody under eighteen years of age had to go to school. Well, I couldn't go to school, because I had to earn a living. So she held that over my head.

One of my friends introduced me to the company librarian, who invited me to read the biographies of great men. I read a lot of them. The one thing that really got to me was the discovery that every one of them rebelled against the church they had been brought up in, and they became agnostics. All, that is, but one, Edward Bok. I didn't like him; he was a phony.

There was a young Jewish girl who gave me some encouragement. She was the only person I knew if the world who supported me in trying to fight my way out of that church. But I finally reasoned something like this, that if there is a God--I'm not sure there is, still not. But if there is, and he provided me with a brain,

he expects me to use it. If God would punish me for all eternity for acting on the conclusion reached by using the brain that he endowed me with, then God is unjust. And so either God is unjust, or the Church is wrong. And if God is unjust, there isn't a thing I can do about it, and so I'm going to have my integrity and that's that.

So one Sunday morning, I got as far as Old St. Mary's Church on California Street--I was living in North Beach at the time--I was scared. You know, the Catholics believe that if you miss mass only once, even, you're all through, unless you confess it and get back in the good graces of the Deity.

I looked in the door and saw all these miserable people in there, fumbling their beads, and I made up my mind I would not go in there. I went through this logic of mine once more, to see if there was any flaw in it, and I couldn't find anything wrong with it, and I said, "I'm not going to go in." So I turned and I walked up California Street, and I just kept going. Well, I walked clear out to Land's End, and I stood out there with the fog blowing in through my open shirt, tears streaming down my face, and I was free.

Well, you know, ever since then--that's basic to me. First of all, I didn't think of it at the time, but I look back on it now as a religious experience, a strong one. From there on, when I'm involved in a controversy, if I figure out something and reach a conclusion, and everybody disagrees with me, I just think back on that and I stand my ground.

Steen: The majority rule doesn't necessarily mean truth.

Robinson: It doesn't mean anything. It just means that lots of people have unthinkingly gone along together, and that doesn't do anything except create political problems. The point is that I never again allowed anyone to con me into saying I believe something I'm not convinced of

in my own mind to avoid controversy. The difficulties it raises are just too painful to bear.

Steen: In the letter you wrote to me six months ago or so, you were suggesting ideas to pursue, and one was the Unitarian Fellowship. So you did get back into religion, of sorts.

Robinson: Well, yes. I was belligerently opposed to being involved in any church. From there on, people were always trying to convert me and get me to come to their church, because it was different, and all that. I'd get there, and it would just be an embarrassing display of nonsense. So I just refused to have anything to do with it.

When we were married, I made sure that my wife was of the same persuasion. She had gotten out of the Mennonites in much the same way I had left the Catholic Church, although more gently. Her parents had survived it. They had good strong family ties. She didn't want to hurt her parents' feelings, but she had outgrown it.

Anyhow, I just wanted to be sure we didn't have any of that stuff in our family. When our kids started coming along, one day she told me that the kids were being proselyted by some orthodox church people in the neighborhood, and they wanted to go to Sunday school. I was going to have to do something about it.

My first thought was that I was being betrayed by my wife, but then I realized that that wasn't so. She got me to realize that if I had my way and told them that they couldn't go, I'd lose. Either they would go in a reaction to me later, or I'd just weaken and they'd get involved and be terrified by stories of Hell and all this stuff, which I wanted to avoid.

So it was up to me to go find a church that made sense, and Adina suggested that I look in on the Unitarians. There happened to be a Unitarian church in Sacramento, and I went there.

Here was an obviously well-informed, intelligent man saying what he really believed from a pulpit in the church. I could hardly believe it. I had never heard of such a thing.

Well, I kept going back Sunday after Sunday looking for the catch, and there was no catch. So I became a very enthusiastic Unitarian. [Laughs] We enrolled our kids, and they got along fine. Then in 1949, I was transferred to San Francisco to set up the timber management plan for the Southern Pacific Company, after I had persuaded them to change their policy, you know.

That meant moving down here, so we chose Marin County. That was when we bought this house. We rented in San Rafael for a year first. I looked for a Unitarian Sunday school here, and there was none. I'd heard that the Congregationalists were very similar, so I asked the Congregational minister if that was the case with his church, and he said, "Nope! We're Bible-believing Trinitarians. You might look in on the Christian Scientists." Well, I wasn't about to get involved with the Christian Scientists. I didn't know what to do about it.

Then I discovered that the Unitarians were starting Fellowships around the country. So I got in touch with the regional director at Berkeley and found out what that was about. We organized the Marin congregation of the Unitarians, which is now a flourishing establishment. So that's how that came to be.

But for a long time, I thought that if I didn't do anything else in my life, that was worthwhile.

Steen: You've talked about your personal philosophy, at least as related to religion, and how you used that as a benchmark. When you're convinced you're right, you go ahead. Do you have other philosophies that you consider your own?

Robinson: Well, yes. My father was a freethinker, too. When I was quite little, I used to ask

him to help me decide what I should be when I grow up. Teachers in school would say, "Now, you've got to decide what you're going to be, what you're to study." So I'd ask my father, and he'd say, "Be yourself." That used to annoy me. [Chuckles] I thought it was a copout. But I later realized he was right.

He would also say, "Know thyself." I would ask how to determine what's right or wrong about things that seemed strange in the world, and his answer was always, "Know thyself." So I suppose that's where it came from. And that's where I am.

Whatever God there is, to my way of thinking, is the universe itself taken in its entirety.

Steen: When I teach at U.C. Santa Cruz, a lot of my students feel guilty because they don't know what they want to be yet. They feel great pressures to make that decision, and of course, they have to make it sometime. But you're always being asked, "What do you want to be when you grow up?"

Robinson: I'm still wondering. I don't think you have to decide. I find that life just unfolds. Everything I've done of any significance has turned out to be one of the qualifying experiences for the next thing I do. It's always been like that. I think life just unfolds like a flower. I think the important thing is to know that you are doing something that is socially useful.

Another thing that my father used to insist on, and which I found verifications for in all my life, and that is that there's pleasure in any kind of work, no matter what it is, providing it's socially useful and that it's well done. Don't you find that?

Steen: Right. I think that everybody wants to be useful. We define it differently.

You expressed interest in art, and I see that there's a range of art objects around the house. Is that your wife's or yours, these oriental things here?

Robinson: Most of these things you see in this room are things that we've acquired. That's Eskimo art there. The one over here, on this wall as you come in, is a painting by a famous Chinese artist. He had studied in Europe for awhile, and he did that while he was a student.

Steen: Do you paint or draw?

Robinson: Paint, and I also make an art of photography.

Steen: You and Ansel Adams.

Robinson: [Modestly] Oh, no, no. All I do are slides. I have some darn good slide shows. Through studying painting, I learned how to make good composition. I shoot for composition.

How I got into that is kind of interesting. About 1953 or '54, a neighbor who is a good friend of ours came by and asked me to go with her to something up at the College of Marin. I didn't notice what it was, and I didn't care. She was a good friend, and I thought she just wanted an escort. Her husband was away that night or something, and so I went with her. It turned out to be a course entitled "Art for Parents and Teachers." The instructor was Ann O'Hanlon. Have you heard of her?

Steen: No.

Robinson: Her husband, Dick O'Hanlon, taught sculpture at Berkeley for a number of years, and she was director of the art department at Dominican College at the time. She is a genius at teaching, and she is an extremist in the philosophy of experience-centered teaching techniques. At that time, teaching methods were a matter of great controversy in the public schools. Some people thought that kids should have the 3 R's drilled into their heads, and others felt that the kids should be given experiences so that the education would consist very largely of answering their questions.

So Ann was an extremist on the experience-centered side, and I felt, well, here's a chance to see if that works. [Laughs] So I went regularly to her class. She couldn't lecture about art, she had to just put us through the experiences that she hoped parents and teachers would provide for children learning art. So we did fingerpainting and we did all kinds of things. Made designs with torn paper and collages and just all kinds of stuff.

Steen: Do you think that this training in art, interest in photography, developed a sense of aesthetics that you didn't have before and had an impact on you as a forester that other foresters might not have? Is that part of why you worked for the Sierra Club?

Robinson: It's something like that, yes. Actually, what it did was not to provide any new techniques or knowledge, particularly, but it simply reaffirms that adage of my father's: "Know yourself." One of the things Ann insisted on was that we should keep everything we do. I was in that course for four or five years. Well, at first, I thought the difference between the things I did and the things that artists did was a measure of my inferiority. Several years later, after I knew that I knew how to paint, I went back and looked at the things I did at first and found that they weren't very much different. But then I knew that the difference between the things I did and the things other painters did was a measure of my individuality.

Ninety percent of learning to paint is making that transition.

I carried that over into other areas of concern. I think this is true of everything. I know that in learning a foreign language, at first you are struggling with the mechanics of the language and trying to build a vocabulary, and you're being very careful about the sequence of words, to be sure that your grammar is correct. But as long as you're doing that, you haven't

learned it. When you decide that you don't need that stuff, and make up sentences of your own, and think in the language, then you've mastered it.

It's similar to learning English. Teachers give us all these rules of grammar, and when you get to the point where you phrase the sentences the way you want to, because that's the way you want it, you don't give a shit about the rule, then you've learned to write.

So the experience in art was a strong affirmation of that principle, that learning is a matter of discovering oneself, and creates a developing confidence in oneself.

Steen: It heightens your ability to perceive.

Robinson: Oh, yes.

Steen: A lot of people can drive down a highway and never see left or right. They're looking at the highway, because they haven't been trained, or they're not interested, or some such thing.

Robinson: Or haven't thought about it.

Steen: It's like somebody trained in architecture can walk down a city street and see all sorts of things that you and I might not have seen. We don't even know that they're there to see. It's all a matter of aesthetics. And what is pretty is certainly a factor of forest management.

Robinson: Well, I think what it comes down to in relation to forestry is that a lot of my work is in giving people who are not foresters self-assurance. I want people to realize that their gut reaction to what they see is reliable. If they see the land torn up and the soil eroding and the forest destroyed, and somebody tries to tell them, "Oh, yeah. This is even-aged management, and this is scientific forestry," and they don't believe them. I want them to know that they need not be confused by this guy's sales line. They should have confidence enough to go

and look for supporting data to substantiate their observations and not worry about his propaganda.

Steen: Does your philosophy or attitude distinguish between natural environment as opposed to man-made? For example, you like Oriental art, and certainly they do a lot of landscaping in Japan. But so much of the ecology movement is tied up with bean sprouts, natural food, and the natural landscape, and anything that we might do has to be inferior. Is that part of your attitude? A well-managed stand apparently is attractive to you. I've seen some of your slides. You point to it with pride; there's a well-managed, selectively cut stand of ponderosa pine. And yet that's a man-made or man-manipulated stand.

Robinson: Well, it's hardly man-manipulated. The growth of the vegetation takes care of a lot of it. I just think that the beauty of the forest is mostly a by-product of good management. I don't think you should work for it directly.

Steen: The Forest Service is hiring more and more landscape architects, as an example.

Robinson: Yes, and I'm contemptuous of that. I think of the Forest Service hiring landscape architects the same way I do the military hiring chaplains. I really do. I think that--well, I've said it already. The beauty of the forest is a by-product of good management. If it doesn't look good, then it isn't good management. It's as simple as that.

FORESTRY EDUCATION

Harold Steen: Let's turn now, if we might, to your forestry education. Why did you enter forestry?

Gordon Robinson: That's a good yarn. I went to school and dropped out and went back to school, several times, you know. I told you how I left in the first place. Then I found I wasn't getting anywhere unless I had a high school diploma. So I went back and lived with my family on a farm in central Oregon, finished high school, and then came back to San Francisco again.

This time I worked for Remington Rand. There was a girl named Dorothy Olney, who kept telling me I ought to go to college. I told her, "But I can't," and she said, "But yes, you can." Finally one day I told her, "But my grades aren't good enough." I really had done miserably in high school. She said, "But you can go to junior college as a special student." "How do you know?" "Well, my father is president of Marin Junior College. I think if you go talk to him, he will assure you."

After a little prodding, I took a day off and went to Kentfield and talked to Mr. Olney, and lo and behold, she was correct! I could enter as a special student. So I did, and I made arrangements with Remington Rand to work half-time. They were grateful for that, because they were laying people off, owing to the declined business during the Depression. It was '31, I believe.

So I decided first I wanted to be a teacher. I loved physics and chemistry, but I had never dreamed--I just didn't think it was possible for me to ever become a chemist or physicist or college professor, but I thought I might be able to get to teach it on a high school level. I thought I could do that.

But when I got a closer look at the teachers, and the way their lives were, how they were harrassed by school board members and parents, about their smoking habits and their sex habits and all this stuff, I decided that I wasn't going to be involved in that. So I decided to be an engineer like my father.

The professor of physics was a Roman Catholic who took it upon himself to find out who were the Catholic students on the campus--

Steen: That's incredible.

Robinson: --and force them to go to church or else. So I ran into the same goddamn thing that I had in the telephone company. [Laughs] Well, he flunked me, because we fought about religion for a year. I don't know if that was the reason, but I think it must have been, because I'm good in that kind of subject.

Anyway, [laughs] I changed my major again. After a while I was really very disturbed about this major business. Dr. Souza, who taught chemistry, was a real good person. I was telling him my troubles one day, and he said, "Why don't you forget about your major and just go to school to enhance your enjoyment of life?" Well, that took an immense load off my back! Of course, that's what I'm doing anyway, isn't it? I hadn't realized it, you know.

So I took psychology and art and philosophy to answer my questions. I was curious about all kinds of stuff. So I took an extra year--I was three years here at this school--and then I figured it was over, because I didn't see how I could finance my way through Cal. Some kid--I've forgotten who it was--insisted that I should go to Berkeley at least one semester, to see what it's like. I didn't know what I was going to do, so I decided I'd do that.

I went over to Berkeley and enrolled. They said, "What's your major?" and I said, "I don't have one," and they said, "Oh, you have to have a major or we can't accept your enrollment."

[Laughs] There I was in the soup again! [Laughs] Fortunately, I had taken Dr. Strong's professional aptitude test. You know about Dr. Strong at Stanford?

Steen: No.

Robinson: Well, he did a lot of work correlating the likes and dislikes of the whole gamut of the human experience of people who are happy in their professions--not successful, because he doesn't know what success means, but happy in their professions--with the students, on the theory that if you have the same likes and dislikes as the people you are working with, you'll probably be happy in that profession.

Well, he couldn't assure me of anything because my tastes covered such a wide range, I guess. [Laughs] Anyway, he had doctor, minister (which was absurd, because I didn't believe in God--I hadn't heard of the Unitarians yet), chemist, physicist, engineer. In those days, people were hanging on advice about job opportunities in various professions, too. Every time a new report would come out, a lot of people would change their majors to increase their opportunities of employment. [Laughs] Times were pretty desperate, you know. So I got the most recent of those, and I matched the things in this Strong test with the job opportunities.

Then I took that again and matched it up with the prerequisites that were required for these different courses, and somehow wound up in a major of foreign trade. I'll never know how I did it, but that's what happened. It served the purpose of the moment, and so I worked out a schedule in foreign trade. There would have been a class at eight o'clock Monday morning, and so I was content for the weekend. The phone rang, and it was Ed Griffith, a friend of mine from Marin, who transferred to Cal a year ahead of me. He said, "I found your name in the list of new students, I want to come and see you."

I said, "Oh good, come on up! I'd love to see you." So Ed came and he asked, "What are you majoring in?" and I told him this long tale.

He said, "Why don't you take forestry?" "What's that? I never heard of it." Nobody had mentioned it. He said, "Well, it's taking care of forest property." "Is that what you're majoring in?" "Yes." "Well, what are your job opportunities going to be?" He said, "Well, I don't know." "Then why are you doing it?" He said, "I just want to stop them from pulling up all the trees."

That sounded pretty good to me. He said, "What are your prerequisites?" and I said, "I don't know, what are they for forestry?" He said, "Let me see." So he worked out a schedule for me for forestry. Well, it turned out that I would have to begin all over again, practically. I didn't have half of the prerequisites. It was kind of fun. But if I took that, there would be an eight o'clock class in dendrology, by Baker, Monday morning.

We laughed it off, and Ed went home and I went to bed. But then I kept waking up wondering, should I go to that forestry course or that foreign trade course at eight o'clock tomorrow morning? [Laughs] And I couldn't go to sleep. I finally decided, in order to get this out of my head and go to sleep, that if it was a socked-in foggy day, I'll go take the foreign trade course. But if it's a bright clear day and the birds were all hollering and yelling, I'll go take that course in forestry.

It was a beautiful day.

Steen: What else could you do then?

Robinson: And that's how I came to be a forester. I had the courage to do this because my father had always insisted that [laughs] there's pleasure in any work if it's well done and it's socially useful, and this was up to me. Certainly it was useful.

Steen: The sunny day. That's how you got to be a forester.

Robinson: Yes.

Steen: Who was your favorite professor?

Robinson: Oh, Dr. Baker. Baker was teaching silviculture and dendrology at the time I was a student. He later became the dean. He is the author of two textbooks on silviculture which are part of the American Forestry Series. His philosophy is pretty well described in the foreword to his second book which is called the Principles of Silviculture.

He uses a quotation from Cotta, a German forester who lived a hundred and fifty years ago, saying something to the effect that the ideal forest is where there are no foresters and, therefore, no forestry. And this was translated and used by Fernow in the first edition of what later became the Journal of Forestry. And he used it again in his book, as I said.

Steen: You use that as an introductory paragraph in your essay entitled "Excellent Forestry": "The good forester takes the highest yield from the forest without deteriorating the soil. The poor one neither obtains this yield nor preserves the fertility of the soil." In terms of excellent forestry, how does one translate that into what's going on today?

Robinson: Well, at the present time, foresters throughout the world are performing as though the soil theory has somehow been discredited. Really! I have seen this in Australia and New Zealand and Norway and Canada and the United States. They're using big heavy machines. The research is designed to develop ways of logging the least expensively with little or no consideration for the impact on the soil.

Steen: There's another quote that I want to read from that introduction to Baker's second

textbook: "The forester who practices much writes but little. And he who writes much practices but little." Do we have the wrong people writing textbooks today? Baker apparently wrote a textbook that meant a lot to you and influenced your personal philosophy toward dealing with the forest. If this statement from Cotta is correct, how do we deal with that? The people who know forestry aren't writing the books.

Robinson: I don't know. I've been inclined to say that's somewhat of a cliché. Probably it's true. I know that the textbooks of today are not nearly as satisfactory as the ones we had when I was in school. They expound at length on detail without showing the derivation of the subject matter. There are whole volumes on things like data processing techniques and photo interpretation, stuff like that.

But the books that I've seen, and this is verified by the students that I've met, too, don't seem to deal with what I think are the real basics. You should be able to go right from observable data and the axioms of Euclid and somehow find your way down to the conclusions and justification for your practices.

If you can't do that, not that you should do that all the time, but this should be the course of thought in the development of thought in the process of teaching. I don't think that's happening today and I don't think that's the way our books are being written.

Steen: Let's go back to Baker for a minute. As best you can remember about his actual lectures, did he teach silviculture with an obvious sense of ethics, defining ethics as decisions you make that effect other people--and certainly applied silviculture effects people all the time. Was silviculture a biological concept or was there a social element to the man? Judging from the foreword, it's hard to know what the rest of the book is about.

Robinson: He dealt with a long series of generalizations that have been developed by foresters,

mostly European ones, I believe. Although not all together.

Steen: What I'm trying to find out is how your ideas formed. You refer to Baker as a very important person in your education.

Robinson: I saw him as a whole man. He'd be what we refer to as a Renaissance man, you know. All kinds of things, every kind of experience that he knew or had found its way into his thinking, and there was a place for it. And he wasn't torn with inconsistency and he wasn't covering anything up. He was a free, comfortable, rather broad person. He was gentle and philosophical, too.

Steen: You said that Baker was your best professor. But how do you rank a professor? When you say that somebody was good or bad, what's the criterion you use for evaluating a professor?

Robinson: I think in Baker's case I liked him best because his philosophy agreed with mine. The things that he brought us to in his teaching confirmed my love of the forest. I just had a rapport, because he showed me how to do the kinds of things I thought needed to be done to manage a forest in the way that I would like, having it managed. That really was it.

Steen: What other classes did you like? Baker taught dendrology and silviculture, right?

Robinson: Yes. I liked silviculture, very much. I liked mensuration, and I liked management. Dr. Barr taught those. He also was my kind of man.

Steen: You've mentioned him before. Percy Barr was somebody you thought was one of the best profs.

Robinson: Yes. He was a rigid disciplinarian, and he piled great work on us, and he gave us hurdles to jump. He was tough in that sense. But I enjoyed that because I was always good at math and I liked to solve problems and I could do it. So I could excel at the kind of thing that he did. That was part of my reason.

But more than that, he was fearless in arguing against the people who lobbied for the timber industry, trying to put down the Forest Service for their sustained yield policies and their selection management and that sort of thing.

Steen: You had Walter Mulford, too?

Robinson: And he was dean at the time.

Steen: Did he teach policy?

Robinson: Yes, and I think forest economics. But I never had a course from him. Actually, I had a minimum of forestry courses. I would have liked to have had more, but it took me six years to get as much as I did. [Laughter] And I really didn't want to stay on any more. Forest influences would have been another good one. I admired Kittredge, and I bought his book and got a lot out of it.

Steen: This might be hard to generalize, but what were the attitudes of your classmates toward forestry, both in terms of technology and also in the ethical sense of the conservation movement. Did they want to go into industry and make money or what?

Robinson: I think that probably half of them were just going along because they thought that was a way of getting a job. They weren't really thinking much about anything else. I don't think they had any particular objectives.

You know, at that time--this is probably largely still true--the boys seemed to excel in mathematics and science, but did not do well in the reading subjects of history and literature. So more boys took engineering--I mean, boys took engineering more than any other subject.

The ones who couldn't cut the math in engineering transferred to forestry, so we had the dregs of the university in forestry school.

Steen: That's pretty much the way at the University

of Washington when I was at school, the same kind of people flunking out of engineering because of the math, and they didn't like to read, so they came out of the humanities.

Robinson: Yes. So there they were--the least qualified people, the ones with the least interest in intellectual concerns. That must have accounted for half the people in that class.

Then I'd say the bulk of the ones who were interested weren't just drifting like that. They were associated somehow with families in the timber industry, and they wanted to be logging engineers. There were a few who loved the forest for its biological considerations. I remember John Mahoney was one. He's now with the Park Service. He never did want to do anything except work for the Park Service. He didn't want to do any logging. That disturbed him.

I'm the only one I know of in that class who wanted to manage the forest commercially, but do it in such a way that it remained useful for the recreational values.

Steen: How about wilderness areas and so forth? Were most of your classmates opposed to that non-utilitarian approach to forest management?

Robinson: Yes, most were opposed to it. The word "wilderness" hadn't yet entered our vocabulary. There were Primitive Areas at the time. I remember at summer camp, when Emanuel Fritz was one of the instructors. We had two instructors--I think it was six weeks' summer session. For three weeks, we had Percy Barr, and the other three weeks, Emanuel Fritz. Fritz brought in the timber management officer from the Plumas National Forest, a guy named Peckinpah, and another guy named Hank Norton, who later became forester for Feather River Lumber Company. They were scoffing at the Forest Service, or rather at the recreation-minded people--what did they call them?--the little old women in tennis shoes or something--who were trying to get a Primitive Area around Spanish Peak. Peckinpah told us how

he prevented that from happening by selling some timber to Meadow Valley Lumber Company within the area they wanted and requiring as part of the contract that they build a road up to it. They wanted to make them start logging at the most remote place and work down toward the mill, partly so that they wouldn't high-grade the forest, but primarily to frustrate the conservationists. He was very proud of that. I was pretty disgusted with it. But that was the first I'd heard of Primitive Areas. I didn't know they did that.

Steen: It seems to me that I got through forestry school without being exposed to any philosophy. You learn forestry as a technology, and you graduate, and go to work for somebody, and you follow their rules, and you lay out timber sales, and you log carefully and maintain the productivity of the land, but it was strictly a technology. It was never an ethic. This view of forestry came much later for me, really after I left the Forest Service, when I began to look at it in a more professional sense than a technical sense.

Robinson: The whole faculty in Berkeley, with the exception of Myron Krueger and Emanuel Fritz, were people who would be very strongly supporting my position, the Sierra Club position today, I'm sure. There was one guy I don't know about named Malmsden. He was there only for a year or two, and I never knew what he was about. But all the rest of them were clearly interested in what we would now call multiple use forestry, as opposed to what's happening. They would have all been appalled at what's happening to the national forests.

FORESTER FOR THE SOUTHERN PACIFIC LAND COMPANY

Harold Steen: You graduated after a mere six years [laughter]. Why the Southern Pacific Land Company? During the Depression, why did they even hire a forester?

Gordon Robinson: Right after I got out of school, I worked temporarily for the Forest Service. I worked for Don Jackson making maps. They were making maps from aerial photographs of the whole national forest system. I guess it would turn out to be that forest inventory they called the Resurvey in 1945. It was the basic work for that. But this was just until the end of June, when their budget ran out, or their appropriation ran out.

About that time I got a job with the state Division of Forestry in Sacramento. This was interesting. There was a guy named Daniel Blood, who worked for the Department of Forestry, the Division of Forestry they called it then. We had a law on the statutes, chapter 3.13, under which every forest land owner had to pay three cents an acre per year in tax to support the Division of Forestry, which at that time was the fire department--period.

They were collecting this from the large owners, but ignoring the smaller ones. Dan Blood's idea was that they should either collect it from everybody or repeal the law. He was right. So I was hired temporarily to help compile the names and addresses of all of the landowners of forest land in the state for implementing this tax.

In the process, I found out who were the major timberland owners, just by the process of working there. The next year I cruised timber for the Forest Service. I think that's what it was. And then my cousin--in Sacramento, who

worked for the Southern Pacific Company, showed me his little company magazine. It indicated that Mr. Impey, who was the Land Commissioner, that's chief executive of the land department of the Southern Pacific Company, had died. I thought, gee, I guess everybody will move up a notch, and there'll be a place for a low man on the totem pole. So I applied for a job with them.

About the same time, Baker got in touch with me and told me that there was an offer for someone, a forester for the Associated Oil Company on a lot of timberland they had acquired for the oil--for the prospects of oil in the southern states. I also got notice of a job offer from the Forest Service, because I'd passed the junior forester's exam. This would have been work for the Klamath National Forest up in Yreka. So I had these three jobs, all at once.

Well, I decided that it was better not to be in public employment if I could avoid it.

Steen: Why was that?

Robinson: I don't know. It was a wrong decision, but I thought that. You know, there's always this contempt for the people on the public payroll. I had picked up some of that, and I just thought that way at the moment. I didn't want to go down south because my sympathies were with the blacks, and at that time, the racial conditions in the south were really bad. I just didn't think that I could survive in that social climate.

But the Southern Pacific looked like a tremendous opportunity, because they had more timberland than anyone else in the state, and they weren't doing anything with it, just selling it to the lumber companies. So it was really an easy choice. I probably think it was that, more than the idea of not working for the government.

Steen: What was the junior forestry exam like? They had done away with it by the time I went to work for the Forest Service. I didn't have to take a

civil service exam as such. Legend has it that it was very difficult. There were people who had made district ranger and still hadn't passed the test. You had to know the difference between a board and a plank and all kinds of artificial definitions of things.

Robinson: No, it was a lot of technical stuff. I don't remember what the questions were. It's been a long time. But I know it was quite comprehensive. We went through quite a bit of material on silviculture and mensuration and on policy matters. It was a well-rounded, comprehensive examination.

Steen: How about the fellows you went to school with? You went to work for S.P. Didn't they mostly go to work for the Forest Service, if they got a job in forestry at all?

Robinson: Yes. Well, about half and half. I think about half went to work for lumber companies.

Steen: That many? I'm surprised.

Robinson: I don't know. I didn't keep track.

Steen: In my own class, at the University of Washington, the draft from the Korean War really took a big bite out of the enrollment. We started with seventy-six freshmen; only fourteen of us got through to graduation. Almost everybody was over in Korea with an M-1. You had to be in the upper quarter of your class to keep a draft deferment.

Thirteen of the fourteen, including myself, went to work for public forestry. Only one in my class went to work for industry. There's been a lot of shifting since graduation, and a lot of them have left public employment for private enterprise.

Robinson: It seems to me, if I remember right, that something like 2000 or 2500 people took the junior forestry exam in a year, and about 1200 of them passed, and seven of them were given jobs. This was during the Depression.

Steen: All right, so you're working for S.P. And you have all this technical knowledge and a certain ethic, and they weren't doing anything. How in the hell do you get them to do the right thing, with all the inertia built into a large corporation?

Robinson: I was the first professional forester the company had ever employed. They had a long series of woodsmen, cruising timber and appraising it for them. During the Depression, they laid those guys off, because there was no sales in land. They had this one guy, an Indian whom they liked, and they kept him I guess just because he was an Indian.

Well, there's several things. For one thing, I was proud that the Southern Pacific Company--I went there and met the people who were managing the company, and the land department, and I liked them immediately. They were gentlemen. They were educated people, and they had a conscience and a concern. They were not trying to wring all they could get out of the land. They wanted to see these lands used properly.

They welcomed me as a professional forester who could give them some advice as to how these lands could best be managed. Really, it was just amazing, but they did. I didn't feel mature enough to give them that kind of advice.

Steen: They weren't really freight-oriented, though? I worked one summer for N.P. Railroad, and to the company timber was freight. It wasn't something you managed. If they wanted freight from the north forty--that's when they logged it, not because it was time to cut.

Robinson: This is true of the people in the freight traffic department, but they weren't running the company. They were one of three factors.

Steen: What was the relationship between the S.P. Land Company and the railroad itself? Was there any relationship?

Robinson: Not very much. It was pretty loose. The land company was a wholly owned subsidiary. Of course, the Southern Pacific had been intimidated too by that lawsuit in which they lost the O & C land from Oregon. The land department was pretty well divorced from the company because of that. I think probably that's why they were more or less altruistic in their policy, because they didn't want to lose the rest of the land, and were pretty well beat by that decision.

But I didn't even know about that at the time. I just saw these people as the sort of people I felt comfortable with, and was really delighted to have the chance to work with them. But it bothered me that the policy was to sell the land to lumber companies.

Steen: To sell the land, not the--

Robinson: To sell the land, and the timber. The lumber company then just simply disposed of it, cut the timber and disposed of the land. After I'd been all over the land grant and could see what it was, I became aware of what we really ought to be doing, and I kept telling the boss that we really should withdraw this land from sale and manage it. He said, "Yes, but that's against policy."

One day I asked him, "Well, who makes policy?" and he said, "I guess I do." So we changed the policy. That's how I came to be brought into the office.

Steen: They probably made as much money selling the timber as they did the land too, in those days, when companies didn't want the land.

Robinson: Oh yes, if not more. They don't know how much of a favor I gave them, doing that. Sure. Well, I guess the thing that immediately preceded withdrawing the land from sale was an assignment to go study the management policies of three railroads headquartered in Seattle--the Northern Pacific and the Great Northern and the Milwaukee.

Great Northern had some 200,000 acres of cut-over forest land near Swan Lake in Montana. We went up there and looked at it. They had just shut the mill, and they just cut the last of the timber. The town was on the auction block. Depressed, unhappy people wandering around the streets. They wished they had done otherwise. This was land they'd bought.

The Milwaukee had two or three hundred thousand acres that they'd purchased out on the Olympic Peninsula. They were managing that for sustained yield, but it was still pretty young, and they wished they had more.

The Northern Pacific had two or three million acres, two and a half million acres, I think, still of timberland in the land grant after having sold the best of it to Weyerhaeuser to get them settled on the land in the early twenties.

They were managing it for sustained yield. Their people were just wonderful. They showed us their plans, and how they arrived at the sustained yield, and how they managed their sales and all. I was greatly inspired by that, and came back and wrote a detailed report, pointing out what these people did and recommending that the Southern Pacific do the same.

Apparently they needed that. Most businessmen don't want to do anything unless they know that some other businessmen are doing the same thing. This told them that one was doing the same thing, and two others wished that they had been doing the same thing. So that seemed to be all they needed.

Steen: Was your boss under pressure to bring in a certain amount of income each year? He was obviously making some money all along. If his income dropped to the company, was that a problem he had to overcome, or could he just--?

Robinson: I suppose. I suppose. But I didn't worry about that.

Steen: When I worked for N.P., again--this was at a very low level. I just was running compass for timber cruisers. They said that their land company had a quota. They had to earn six million dollars--some figure like that--every year for the railroad. That's what the railroad wanted, that much income from the land. That was really pressure on the foresters to manage the land to produce that much income. This was in the early 1950s.

Robinson: Well, I figured out how much timber we could sell, and estimated the income that we could get from it. And nobody ever questioned it. My boss was in between the president of the company and the board of directors and me. I never dealt directly with the board. Now maybe he had to do some bargaining and arguing to defend my policies. I don't know. But if so, he never revealed any conflicts over it to me.

We had several members of the board who were conservationists, too. I remember after we got the management plan going, one time, we put up a sale in the forest land just west of Lake Tahoe, and one board member heard about it and was terribly upset. We had to assure him that this wasn't going to fuck up the landscape around Lake Tahoe.

I think the district forester took him out and showed it to him, and showed him the cut on the land, and he could see for himself that it could be logged and still be left looking like a forest. In fact, some of the dead trees were removed, and it looked pretty darn good.

Then he bragged about the policies after that. But it took some doing. So I think that we were just fortunate in the board members that we had.

Steen: How did you interact with the Forest Service? They had every other section...

Robinson: Oh, we were close. We were very close. We were allies. The Forest Service people helped me immensely in getting this established.

They helped me find people to hire to implement the program. They even conducted sales for us for a couple of years to demonstrate that it was possible to do this and satisfy our customers. I had to use the people I had. There were only three of us initially. I had to use the whole crew to make an inventory and estimate the sustained yield in order to have a definite program.

Steen: How much forest land did you have there?

Robinson: Oh, around 750,000 acres. We had over a million at the time I went to work, and we sold the best during the time that I was trying to get this going.

Steen: Were you involved with the SAF? Did you think of yourself as a professional forester, in the sense that they talked about it?

Robinson: Oh, yes.

Steen: I think we could say now safely, today, that you don't see eye to eye with general SAF policy.

Robinson: No, no.

Steen: How about then? Has there been a change in the profession or a change of view or what?

Robinson: Yes.

Steen: Or both, maybe?

Robinson: I'd say both. I think that the SAF was more moderate than they are now, at that time. People like Arthur Samson and Baker were active in the Society of American Foresters.

Steen: So was Emanuel Fritz. He was editor of the Journal of Forestry in the early thirties.

Robinson: Right, right. I didn't like the Journal at the time he was editing it. I think the tone has changed. I honestly can't remember. I have never fully agreed with popular opinions in the profession, but I never felt that I was an outcast

either. I mean, I didn't in those days. I have since I went to work for the Sierra Club, but I just felt that I was using my right to speak up within the society, like everybody else.

But about the time I left the railroad, the Forest Service was changing, too. From there on, they wouldn't even put me on the mailing list to receive the mounds of publications that they used to send to me when I was with the S.P. I still can't get them.

Steen: It's pretty obvious from watching your slide show that you're proud of your professional work for the railroad--

Robinson: Sure.

Steen: --but you left the railroad.

Robinson: Oh, you wonder how I left?

Steen: Yes.

Robinson: I got fired.

Steen: You told me that they abolished your position or something. [Laughter] Let's talk about that a little bit.

Robinson: All right. That's a long story, too. You know, in 1942 I was cruising timber out around Weaverville, and I met Everett Jensen, who was then the district forester.

Steen: For the railroad?

Robinson: No, for the Forest Service, the Trinity National Forest. The headquarters of the Trinity National Forest was in Weaverville, and Shasta was in Mount Shasta, and they combined them later in Redding, but at that time it was a separate national forest.

He thought that--well, he took advantage of the fact that he was meeting me, and that I worked for the Southern Pacific Company--to try to persuade the company to withdraw any lands from

sale or development that was in the Trinity Alps Primitive Area. We went up and looked at some of it, and I was fully in agreement with him. I felt that this was not the kind of land that should be developed commercially. First of all, the timber was scarce and the road costs would be excessive, and then it had good recreational value.

So I went to the office or I guess I wrote to them and told them that we should reserve that land. They told me that it had already been reserved, around 1925, but then they wrote the Forest Service another letter, reassuring them that this was being reserved.

From there on, Jens and I worked, whenever we had an opportunity, to further that exchange. The company had fifty thousand acres in there, you see. The idea was to swap that for an equal value of commercial forest land outside this primitive area.

Some years later I turned up managing the forest land, and he turned up as the principle negotiator for exchanges in the land department of the Forest Service in San Francisco.

So Jens came to me and thought that we should get serious about the exchange. I agreed, but I wanted to postpone it until I got the timber management program going smoothly. That would be selling our so-called allowable cut annually, having the customers happy with it, and being able to depend on the men to prepare the sales and supervise them.

After that got going smoothly, then we set to work on the exchange. First they suggested an area for consolidation, and it was between the Trinity River and Mount Shasta, around Mount Eddy. That's low-quality land. Some of it is of good value for recreation, but not as good as the Trinity Alps, but not good commercial timber either. I didn't think that was a good show. I wanted equal value of the best commercial forest land I could get, within the same county, in order not to upset the tax roll.

Steen: I'm holding a clipping from the 13 January 1978 California Log, which is region five's newsletter, an article about land exchange with S.P. It says that during the past several months, the Forest Service and S.P. have been negotiating for 94,000 acres of company land. It refers to the Trinity Alps Primitive Area, and other places. In the last paragraph, it says "Most of the land S.P. will acquire is timber-growing land. Much of the land that the Forest Service will acquire is recreational land." So apparently, they're finally getting around to--

Robinson: They're continuing, they're doing what I--

Steen: 94,000 acres is ten or fifteen percent of the total S.P. ownership, isn't it? You said 750,000 acres.

Robinson: 730,000 actually. Yes.

Steen: That's a pretty sizable exchange.

Robinson: Well, I'm glad to hear that. I didn't know about it.

Steen: It wasn't all in vain?

Robinson: No. It wasn't. I want to see where these are. I hope some of this is up around Mount Shasta.

Well, that's good. All right. So we retained Hammon, Jensen, and Wallen, a consulting forestry firm in Oakland, to cruise the timber in the two areas. I settled on the general area around the Trinity, the headwaters of the Trinity River, around Trinity Center, because that's the highest site quality of land that was in the county, and intermingled with our existing holdings.

So Hammon, Jensen, and Wallen cruised the timber of the stuff in the primitive area, and in the area that we designated we were interested in acquiring for exchange. Then we separately appraised the land, although they helped by providing me with transaction evidence. You

know, each ranger district maintains a file on the sale of property in and around the national forest, for statistical purposes, I guess for appraisal purposes when they're involved in land exchanges. So they just made that available to me. We were using much the same data, and so then they made a specific proposal of certain lands, or certain other described lands. They sent it with maps and all.

I responded by upping the ante. I thought that they had underappraised our land and overvalued theirs a bit. So I went to the other edge of the range of plausibility and made a counterproposal, had it all written up with maps and everything. Now, in the Southern Pacific Company, you don't sign letters unless you're the head of the department. People prepare them for you and initial them and you send them in to the boss, and he signs them.

So the boss got this letter. He called me in to explain it. I told him all about it. He said, "You know, I think we'd better send this up to the executive department for approval before we mail it." It was just a counterproposal.

So I did. I prepared a letter to Mr. Biaginni, who was then the president of the land company and general manager of the Southern Pacific. He sent it back down, saying, "You know, I think you'd better put this formally up to Mr. Russell," who was the president of the company. I don't know why. He said it was a touchy subject.

Steen: You kicked this up to the top man.

Robinson: Yes. Mr. Russell was like Ronald Reagan. He had to have everything put to him in a one-page memorandum, you know. And so I prepared a one-page memorandum, describing that the Southern Pacific had 50,000 acres of worthless land, suitable only for recreation and for which there was no prospect of income. We proposed to exchange that for eight thousand acres of the best commercial forest land intermingled

with Southern Pacific's holdings that now were owned by the Forest Service, and the taxes on the land would be so much, and the type of land that we would acquire so much, and the sustained yield income would be approximately so many thousand board-feet a year and so many dollars, and I recommend approval.

I asked for authority to negotiate. Russell took one look at it and he scribbled across it, "If you can't make a better deal than that, you'd better break off negotiations." He wanted equal acreage exchange.

Well, I figured he was an ass, and I got sarcastic about it, so they fired me.

Steen: You said something in one of your letters to me about a loyalty oath, as part and parcel to your leaving the railroad.

Robinson: Oh, yes, that's right. I got into trouble with the people there several times. During the McCarthy era, all the big shots in the Southern Pacific company were supporting McCarthy, and they tried to feel me out on what I thought. I thought McCarthy was awful, and said so. They kept asking me, "Well, what's wrong with a loyalty oath?" and then nobody would pay any attention when I tried to tell them.

I finally decided that the people who were objecting to loyalty oaths--I mean to say, the people who were asking that question, what's wrong with the loyalty oath? didn't have an interest span long enough to receive an explanation. What this country needed was a one-sentence answer to that question. And so I went to Ernest Besig, who was my friend. I was active in the Civil Liberties Union here, on their board of directors for a number of years too for the Marin Chapter. I told him that. He never did anything about it. I came to realize that if you have a bright idea, you're the one that has to do something about it, and giving it to somebody else doesn't work.

So one day I sat me down with pen and pencil, and I wrote a letter to the Chronicle, and I said that people are always asking what's wrong with the loyalty oath. I wrote: I can answer that and two other similar questions, in one sentence. To sign a loyalty oath or to salute a flag or to recite a creed is not a demonstration of loyalty but an act of submission; free people just don't submit.

So that cost me my job! [Laughter] And I'm very proud of it. I think that--I got it all together in one sentence.

Steen: All right. You have this nice home in Marin, and children, and the company and you have parted ways. So you became a consultant.

Robinson: I became a consultant, right.

Steen: What were the options or alternatives at that time?

Robinson: I should explain something. The record will look a little confused at this point. In 1956, I think it was, when this loyalty oath thing took place--at that time they punished me by asking me to change places with my assistant, who was then Kermit Cuff, and have him be the chief forester, and I would continue to be the forester.

I was bitterly hurt by it, but it did permit me to continue to manage the land, although I did it in somebody else's name, in the quiet. I thought at the time that they just didn't want me up front. They didn't want me to be known, although they did appreciate what I was doing. So they let me go on doing it, but had me be sort of a secret employee.

But this second thing, over the Trinity Alps, apparently was the last straw for Mr. Russell. So then they abolished the position, whereupon I refused to take what they offered. I think they did that because I was an officer of the company, and eligible for their company retirement plan, which was quite generous.

But by abolishing the position, they were able to cut me out of that and simply confiscate the money that had been set aside for the retirement. A lot of companies do that, you know, and I was just three years from retirement. This has been made unlawful since, but a lot of companies throughout the country--

Steen: You're retired now, but--

Robinson: I'm drawing railroad retirement, but that's a federal thing. That has nothing to do with the company. When the Social Security laws were set up, there were two set up, one for railroad employees and the other for everybody else.

Steen: Had you thought about being a consultant before you left the company?

Robinson: No, I really hadn't. I didn't know what to do. I have two stories to tell about that, one about the reaction of my family, and the other about what I did. I first want to tell you about my family. I think you'll like this. I felt ashamed--you know, when something like that happens you feel guilty, even if you're not. I'm convinced that what we call guilt, the feeling of guilt, is just a word we ascribe to an emotional reaction which can come from a variety of situations. [Laughs] I wonder what happens with these lie detectors, whether they'll turn up false information for that reason.

My wife was teaching school at the time, so we had a reasonable income from that. We looked at our savings account, and we thought, "We're all right if I never work again." We had three kids in college on a pay-as-you-go basis at the time. But I didn't really want to break this news to the kids. I was afraid that it would disturb them.

But Charlotte, who was going to the University of Washington, was the first one to communicate with us after that. She phoned home, and so I told her what happened. She

said, "Hurrah, Dad! I never understood how you could stand it with that company as long as you did. Don't worry about me." I thought, "Well, for heaven's sake! That's terrific."

The next was Dan. He was going to U.C. Davis. The same thing! The third one was Larry. He was going to U.C. Santa Cruz. He started down there when they opened the campus with the trailers. Well, this was sad to me because that was the only time that any one of the kids ever phoned home for more money. Each school year we worked out a budget for them, how much they needed for room and board and books and tuition and lab fees and all that, and we worked out a schedule and I just sent them a check the first of the month. If they wanted more than that, they could get a part-time job. But it would include spending money and stuff. We set them up pretty well.

Steen: Then you must have lost your job in '62 or '64.

Robinson: '66. But Larry phoned home and asked me for some extra money to buy a new pair of skis. He and a bunch of friends were going to go up to Heavenly Valley, and so I broke this news to him. He said, "Oh, God," three or four times, and I said, "Don't worry about it, it's okay." He said, "Well, then I won't go." I said, "Well, don't change your plans. Just don't do it the most expensive way." You know, he wanted to buy a new pair of the most expensive skis, the latest thing. "Why can't you rent a pair, or borrow it?" He said, "I won't go. Do you want me to come home?" I said, "There's no need to come home." "Yes, but would you like me to come home?"

Well, Larry has always been a buddy of mine. I said, "Sure, you're a comfort to me." So he hitchhiked home, and he brought me Robert Frost's poem, you know, that one "Whose woods these are"? You know what it is. That isn't the title. "On the snowy evening stopping by the woods," something like that.

The next weekend, he hitchhiked home again, and this time he brought me Camus' Myth of Sisyphus.

Do you know about that? Well, Sisyphus was this Greek god who had a mind of his own, who was a problem to the others because he didn't conform. He was always figuring things out and going his own way and defying them. One day he did something that was unacceptable to the gang, and so they rounded him up and meted out the worst punishment they could contrive. They committed him to having to roll a stone up Mount Olympus for all eternity, and every time it got close to the top of the mountain, it would break loose and roll down, and he would have to shag after it and start over again. So when you hear thunder on Mount Olympus, you know that old Sisyphus is taking his punishment and running down after that stone.

Camus, this great French philosopher, took off on this. He said that he wasn't concerned about Sisyphus's state of mind on his way up the mountain. He knows that he's feeling his oats, he's feeling good. What concerns him is what goes on in his head on the way down. I don't remember the line of logic--it's a rather difficult book to read. But the general idea was that he figured that Sisyphus triumphed over his adversaries by coming to realize that you don't get your jollies from achievement, but rather through the struggle to achieve.

So that was the message that Larry brought home for me. I've been very grateful for that, and that's been part of my philosophy ever since.

Steen: So you had to look for a job. What did you do?

Robinson: As I say, we were okay financially. We could get by if I never had a job. So my wife said, "Well, Gordon, next time do what you really want to do." So I got some professional advice on jobhunting, and followed it. The idea was first to prepare a resume of all the things I've done that are worth talking about. So I did. It was a beautiful springtime, and I'd sunbathe out there for days. Every time I'd get an idea, remember something that I had done, I'd come in and type it up. [See appendix A] I had done a fair amount of original work, but I'd never published it, because I was just too busy with other things.

Then I made a list of all those specific things I wanted most of all to do the rest of my life. I wanted to expose the timber industry's raid on the national forests. I wanted to write about what had happened to the Forest Service. And I wanted to write about the forestry schools, and how they'd come to be dominated by the timber industry. I wanted to paint. I wanted to learn to play the guitar. There were a bunch of things.

But the main thing was really a writing project dealing with forestry. So then I made a list of folks who might be persuaded to finance my program. I was thinking in terms of a grant at the time, or maybe employment. I thought of teaching, maybe, at the University of California forestry school. I hadn't realized what changes had taken place. They just laughed.

I thought of the experiment station. John McGuire was director then in Berkeley. He was a friend of mine. They had no openings, but he tried to talk me into international forestry. They had some things through the United Nations that he thought were useful.

I didn't think we were in a position to teach other people how to manage their forest land. I thought we ought to learn how to do it ourselves first.

There was the Center for Democratic Studies in Santa Barbara. I thought maybe I could go down there and hole up and write this stuff. And there was the Sierra Club. I thought maybe they would know what grants were available, and how to approach them.

FORESTRY CONSULTANT TO THE SIERRA CLUB

Gordon Robinson: I went over to the Sierra Club and met Bob Golden, who was then the office manager, and I told him what I wanted to do. He said, "You know, I think this is a go." I said, "What do you mean?" He said, "Well, Dave Brower has wanted a forester on the staff for years, and you're the only one he would trust." I didn't know that Dave Brower had ever heard of me. This was amazing to me. I guess I had written stuff to them, and sent them things, but that was really amazing.

Well, I wasn't thinking of working for the club. I was thinking of them helping me find a grant, and do some writing. I just thought right there, if they want to retain me, that's all I want to do. I never looked any further. So I just came home and waited for them to-- He said, "We don't have money; we'll have to see what kinds of money--"

So every week or so, I'd phone Bob to see if they found any money, and he always said no. Finally one day I told him, "Look, Bob, one of these days you're going to find the money. And then we're both going to be unhappy, because there's more to do than we can ever get done. So why don't I just go to work?" He said, "Well, all right. You can use that desk out there if you want to. Who do you want to work for, Ed Wayburn, or Dave Brower?" I'd never heard of Ed Wayburn. He was, I think, the president of the club, but I had never paid any attention to club politics.

"Well, he's handling the Redwood Park battle, and Brower is mainly concerned with general conservation and his writing projects." I thought the Redwoods would be the thing first, because that involved things close to what I'd just been doing, appraisal of property and that sort of thing.

So I went to work for Wayburn, but they didn't want me as an employee, because this would have involved them in fringe benefits, and for a person my age that would have been expensive. So they retained me as a consultant and I've been a consultant ever since. They found the money, and within a couple of years I was earning as much as I did with the Southern Pacific, but much happier. And that's the way it's been ever since.

Steen: Before we talk about what you did as a consultant with the Sierra Club, let's scan this list of your non-Sierra Club consulting jobs. [See Appendix B] There's no particular reason we need to talk about every one of them. But I thought you might take this list and scan down, and if you think you see one that you really like to spend a little time on, just so people can see what you do when you're not working for the club. There's quite a range of activities on that list.

Robinson: The case of Mike Leon in Wyoming--Mike Leon was a legislative consultant to Senator--what was his name? He was defeated in the last election. Gayle McGee, yes. Well, McGee was upset about reports he had about mismanagement of the National Forests in Wyoming. So Mike Leon asked me to come and inspect those forests with him and his secretary. We spent about a week doing that. I looked at the reports that the Forest Service had given them, and looked to see where they were fooling and where they were not, and prepared a report so the senator would know what was going on.

I didn't get paid for that. They paid my expenses, but they didn't give me a fee. The reason is that it's unethical, apparently, for senators to do that.

Steen: Is that right?

Robinson: Yes.

Steen: Sounds like a cheapskate to me.

Robinson: Well, maybe that was it. [Laughs]

Steen: Obviously they have to hire expert witnesses--anyway, they didn't pay you. How did they know about you? Of course, you had Sierra Club publicity by that time.

Robinson: Right. I've forgotten what it was. I was convinced that he was correct in that, but I've forgotten now.

Steen: It was 1972.

Robinson: Yes.

Steen: How about the Kern Plateau association in 1971? I've heard vague things about that. I don't even know what the issues were.

Robinson: That's a group of people around Bakersfield who were trying to get what is now the Golden Trout Wilderness. The people who wanted me involved in it were, again, people who had heard of me through my association with the Sierra Club. It was mainly a packer who had made a business of packing people into this area. So at the request of this association, I went down there and spent a week on horseback going through this area. The forest supervisor was on the trip, and Willis Evans, who was the fish biologist for the region.

Steen: Did you write a report?

Robinson: Sometimes I do. In that case, I never got a report together.

Steen: The California Coastal Commission in '74.

Robinson: They wanted help in describing forest practices, or prescribing forest practices for the coastal strip. I didn't do a whole lot for them. Actually, I went to a few meetings and talked to people, and gave them some general ideas, but I was too busy with Sierra Club work, so I got Jim Greig to do it. So he did the technical work.

Steen: The first draft of the coastal commission recommendations for the coastal zone that I saw

would have required a permit to operate, to log within the coastal zone. That was thrown out. I mean, to log within the coastal zone of Santa Cruz County would have required three permits, one from the CDF, one from the Coastal Commission, and one from the county, which is kind of excessive. Were you involved in that first draft of--?

Robinson: Yes, I think so. But I have forgotten the details. I think the idea was that the Forest Practice Act was not being properly enforced, and we wanted rules and regulations that would do the job. We also wanted to show up the Board of Forestry for their failure to use the opportunity given to them through this Z'berg-Nejedly Act.

Steen: I see on your Sierra Club list you talk about the Tongass suit, but on the non-Sierra Club list, you have this Kodiak-Aleutian Chapter Alaska Conservation Society. There must have been some Sierra Clubbers involved in that.

Robinson: These are things I want to do, and the fact that these are actually not the Sierra Club doesn't mean that they aren't really independent assignments. I did quite a job for them. [See Appendix J]

Steen: These two jobs in Australia--they must have been related, both at the same time.

Robinson: Yes, that was a speaking tour. A hectic one and a delightful one. I'm going to do it again in a couple of months. But they actually asked me to come and talk to the forestry committee of the House of Representatives in Canberra, and I suppose I spent half a day with them.

Steen: I suppose Australia is fifty years behind us, as it's still a pioneer society in a lot of senses.

Robinson: It looked pretty much like home to me, clearcutting and everything. [Laughter] The

same people and the same arguments and the same corporations over there.

Steen: Maybe some of these topics will come up more logically if we just get into your consulting work in general, rather than having sort of an artificial distinction between the two.

Robinson: All right. Any way you want to handle it. The thing that's basic to understand is that I regard myself as a consultant to conservation organizations, and I'll make myself available to any conservation group that wants my help. But I'm not interested in helping the timber industry. I don't take that kind of work. They don't ask me anyway. [Laughs]

But as long as I had enough income from my retainer with the Sierra Club, I just did these things whenever I was invited to do them. They retained me for 60 percent of my time, but I worked full-time and then some, weekends and everything else. But that's simply because that's what I wanted to do.

Steen: Did you mean that literally? Say if the National Forest Products Association said, "Would you come to Washington, D.C., and conduct a seminar, just so we can understand better what the Sierra Club is really after," would you?

Robinson: Oh, if they did that, I would respond, sure. But I wouldn't help them appraise and acquire a tract of land in Borneo, so that someone could set up a pulp mill or some damn thing like that.

Steen: Let's talk about the club itself, before we get to specific jobs. Obviously you have a lot of affection for the club and you have told me before that when you were working for S.P. you didn't think about the Sierra Club particularly, it was just something that happened. You heard a speech of David Brower's once, I guess, at the Berkeley forestry school, where he was talking to the forestry students.

You were impressed by the man, and that sort of made you aware that the Sierra Club--obviously you knew it existed, but you had never thought much about it.

Why do we have groups like the Sierra Club and Friends of the Earth and the Wilderness Society, in a democratic society where theoretically the rule of the majority is what we have?

Robinson: These are all symptoms of a disease. I think that our government, our system, is not working. We have come to be run by the major corporations instead of the people. I think that the--well, that's just it. Congress and the administration, usually, are much more responsive to the big corporations than they are to the people. This has been true for the last thirty, forty years. Things that should be done through government are being done by volunteer organizations.

Steen: When Brower took over the club in the early fifties, I think they had five or six thousand members. It was during his administration, until the mid-sixties or whenever he left the club, that they had this tremendous increase in enrollment; partly, I'm sure, due to national events, but partly due to Brower himself, his personality and his stamina, and so forth.

What are your opinions about Brower and his net worth to the club? I mean, obviously, he broke with the club, or the club broke with him, in the mid-sixties, but would the club have amounted to what it did without him?

Robinson: No, it would not. The club was simply a hiking club. The club was not involved in conservation at all that I know of from the death of John Muir until the appointment of Dave Brower. I think he revived it. I might be wrong about that, but I don't think there was very much of anything by way of conservation accomplished in those intervening years.

Steen: I noticed with amusement that the chief of the Forest Service used to be an honorary vice-president of the Sierra Club, automatically, and that stopped somewhere along about the Brower years. [Laughs] So it was Brower's perceptions of the Forest Service, or maybe the Forest Service changed, maybe both, that caused the break.

Robinson: It was both. Yet, there are several Forest Service people who were enthusiastic Sierra Club members. John Hall's father was. He was the supervisor of the Stanislaus National Forest for many years. I know he would support the kinds of things that--

Steen: You went to work for the club, about the time that Brower was on his way out. Were you involved in that, in any way, an observer of it--?

Robinson: I was an observer of it, and I tried to prevent the break from happening. But I never took a side, partly self-preservation, but more because I really liked the people on both sides of that dispute and I couldn't break with either of them. That's just a genuine thing. There were differences in philosophy.

I can tell you several stories about it. I kept trying to figure out what was happening, you know. The first board meeting I went to, after this had become a problem, was I think about 1967. Ed Wayburn said, after the preliminaries, "All right, gentlemen, I will entertain a motion to increase the club's debt limits from one hundred and fifty to three hundred thousand dollars--" (maybe three hundred and fifty, I've forgotten) "--do I hear a motion?" And somebody said, "I'll make a motion," and "I second."

Discussion? Nathan Clark, who had been a board member for thirty-five years, said, "Well, Ed, I'm not going to oppose this motion, but I do want to know when in the world we're going to learn to live within our means. Three years

ago, you came to us for authority to borrow twenty-five thousand dollars, and then you wanted fifty and then a hundred and now you want to borrow three hundred thousand dollars. I just want to know when in the world we're going to learn to live within our means."

Paul Brooks spoke up. He was the editor of Houghton Mifflin Company then, and in a Bostonian accent he said, [mimicking] "Well, gentlemen! This is perfectly normal in the course of the publishing business," and he went on to explain, "The Christmas season is the book season, and one cannot afford to print books as they are sold." What one does is to estimate the number that can be sold at the Christmas season and then borrow money to pay the cost of printing. And then sell them, and sometime early in the next year, you settle the account, and hopefully you have something left for yourself.

And somebody else says, "Yeah! Every one of these loans was repaid within three months of the first of the year!" So then Ansel Adams says, "Well, it ain't so much the borrowin' that bothers me, it's the interest on this loan. I understand we'll have to pay twelve thousand dollars interest, and I can think of all kinds of things I'd rather do for conservation than just pay this to a bank."

Ed Wayburn says, "Ansel, it seems to me the first of these loans was to finance your book!" Ansel goes, "Ha, ha, ha! I suppose that's so! Ha, ha, ha!" I thought, "Well, the old fool!" I guess he didn't know how business is conducted, obviously. These weren't businessmen, they were hikers.

Steen: Was Brower at this meeting? He must have been.

Robinson: Yes, of course. And so then I thought, "Well, I guess that's all it was. And that should be the end of the argument." But it wasn't.

Steen: They got the $300,000 debt limit?

Robinson: Oh, yes, they did. Then they did--well, this sort of thing--they kept pecking at Brower. And the more they pecked at him, the more he did the things out of reaction that they were falsely accusing him of doing. It finally got to a point where they had to fire him.

I've forgotten several of these, but the last one--Dick Sill, who was professor of physics at the University of Nevada, wrote a scathing letter accusing Brower of misappropriation of funds, and said that this was a criminal offense. He was shaking down the authors of Sierra Club books. So they held a special board meeting to hear about that. I went to that meeting.

Ed Wayburn was the president again. He asked to have somebody recite the charges, and Ansel Adams made the charges, and Dick Sill elaborated on the thing. Then Ed asked the board members in turn--fifteen of them--if they had any comment. He went down the line, "No," "no," "no," "no."

They finally got to Eliot Porter, and he said, "Yes, I have a good deal to say on that subject." He said, "I think three years ago I proposed a book on the Galapagos Islands to the publication committee. The committee turned it down on the grounds that we didn't have the money to finance research. So I put up--" I think he said five thousand dollars "--of my own to finance the research. This was with the understanding that if a book came out of it, I would pay 5 percent of my royalty back to the club to establish a revolving fund for Brower's use in financing research for future publications.

"But if no book developed, the club would owe me nothing." The board has the authority to override the publications committee--I guess the executive committee has--so he took the proposal to finance this research to the executive committee, and they overrode the publications committee, and we did the research

and published the book. You know, that two-volume thing on the Galapagos? Well, that's how that came to be.

Many universities have revolving funds for this purpose, but the Sierra Club has none. I thought it was time that we had means of financing research. Since then, Mr. Brower has asked--he has not required, but he has asked other authors to do the same thing. So far, everyone who has been asked to do this has complied.

That's all there was to it, and I thought, "Well, what the hell!"

It was like that, but I think there are a couple of things that lay behind it. One was that it used to be that there were people who worked in the Sierra Club for many years, and felt they owned it. It was their province. I know from my experience with the Unitarians that sometimes these outside activities are very important in one's life. I was not received well. I wasn't happy in my profession, nor with the people I worked with at the Southern Pacific company. So I got a sense of accomplishment, a sense of personal worth by being active in the Unitarians and with the Civil Liberties Union, because there I was among people with whom I had a great deal in common, and a mutual respect. It compensated for something missing in my professional life.

I suspect that a lot of the people who were leaders in the Sierra Club were using the Sierra Club that way. Well, as the club expanded and new people came in, their roles within the club were challenged, and this threatened them personally, for good--but not club--reasons. And they were upset. That's one theory.

Another is that there were some board members who were active in the club because they wanted to direct the club away from things that concerned their personal interests. Dick Leonard, I understand, had a large block of

stock in the Pacific Gas and Electric Company. In fact, his wife is a member of the board of directors at PG&E. He was very upset with Brower because Brower opposed the nuclear plant at Diablo Canyon, which is now stopped for some other reason.

I think Ike Livermore had been a board member. He was bitter about Brower because Brower was unhappy with foresters, and he was a big shot with the Pacific Lumber Company. There were a number of those things, and I think that had something to do with it.

I think that there are also people who belong to the club and were afraid of losing their jobs, because the club was taking a controversial position on things, and this was getting back to the boss, and they were worried about this giving the boss the idea that they were not working for the establishment. I felt that. That's the reason I didn't join the Sierra Club, I'm ashamed to say, for a number of years. But when Brower came along, I decided that I would.

I had known Sierra Club people, and they had urged me to join it for quite a long time before that, and I was entirely in sympathy with its purposes. I was just a little worried about how this might affect my career.

Steen: There were quite a few other things going on at that time too. I've been reading interviews with Sierra Club board members about the loyalty oath and all the anti-Semitism and racism, especially in the southern California chapter.

Robinson: I've heard of that, but I didn't--

Steen: You have no observations of your own to make?

Robinson: No, I didn't know anything about it. There was one other thing that happened, though. Yes, it's true. I think Brower was the really great leader there. He still is. I think almost everything he was accused of was wrong.

But there were two things I wanted to say, actually. One was that Brower had the philosophy that he was hired as their executive director to further the purposes of the club, and that of the members, to do things for them that they were afraid to do for themselves, or didn't know how to do for themselves. He represents us.

And if it costs more money to do the things that we've undertaken to do, in the name of the club, then it's up to us to get the money to pay for it, not for him to cut the program. He didn't go too far out on that, but he did pull on the reins, so to speak. There were other people who say no, you must always be business-like, you must never lay out a program that hasn't been financed in advance. I can see both of these arguments.

I tend to be conservative, because I had a rough time during the Depression, and we were poor. [Laughs] So I'm kind of affected by that. But at the same time, I see Brower's position on that, and I think he's probably right. I have passed up many opportunities in my own life to make investments, simply because I'm too conservative.

The final thing, though--he did play with the board with impatience, and sometimes with glee. They got into childish difficulties.

I'm reminded of the time when our oldest boy ran across the street in front of our house. We threatened him with punishment if he walked across the street--we were afraid he'd get run over by a car. So one day he ran across the street, and I grabbed him and was going to paddle his little bottom, but he argued like an attorney. He said, "But you didn't tell me I couldn't <u>run</u> across the street!" [Laughs] Which was true. [Laughter]

That's what Brower did, that kind of stuff! They forbade him to publish any more books without the approval of both the executive committee and the publications board, so he put out these

posters--they didn't say anything about posters. And that did it. That was when they decided he had to go.

Steen: So that's it in substance, really. The board runs it, and he is supposed to answer to them?

Robinson: Yes. Basic to the club, though, is something else. This is the problem that McCloskey has, too. You know, when they decided to hire an executive director, along about 1955, they did not change the bylaws to fit the new situation. If you read the bylaws of the club, you'll realize that the elected president is still the chief executive of the club. It doesn't say it in those words, but it's clearly established. And the people who get to be president of the club are pretty ambitious people. As they read the bylaws if they disagree with the executive director, they compete with him. We've had some very highly competitive situations, to say the least.

One time, when Phil Berry was president, the Society of American Foresters invited the--I didn't see the correspondence, but evidently they invited the chief executive of the club to speak at their annual meeting in Syracuse, New York, about eight or ten years ago. And do you know, unbeknownst to each other, both Mike McCloskey and Phil Berry showed up to accept that appointment?

Steen: Interesting, isn't it?

Robinson: But what they normally would do in hiring an executive director for what had formerly been a purely volunteer organization is to amend the bylaws so that the board establishes policy and the executive director implements the policy, and has a division of labor. If they don't like his implementation, they can get a new director. But the club never did that. Now I'm still not sure that's wrong, but it did lead to Brower's undoing.

Steen: So Brower's out, McCloskey was on the scene, and he becomes the executive director.

Robinson: Yes.

Steen: Did the board overreact and really clamp down on McCloskey more than they ought to have, do you think, or was it a pretty smooth transition?

Robinson: It was a pretty smooth transition, because McCloskey is a very smooth politician, and Brower is not. Brower is just true-blue. He tells it like it is, and lets the chips fall--

Steen: So Mike knew how to work with the board then?

Robinson: Yes.

Steen: And that's what it takes.

Robinson: It's typical of creative people to establish something new and then get kicked out, and a smooth administrator to follow.

Steen: Of course, Brower had been there over ten years. Maybe that's all anybody can really stand.

Let's talk generally about the club and Brower and the transition to McCloskey and the way the board and the council and the officers operate--

Robinson: No, I don't have much to say about that, because I don't know very much about it. I have concentrated so heavily on the timber things and forestry matters that I have not kept up. I don't know what the difference is between the council and the board. I don't know why they had it. I have some suspicions, but I really haven't studied it.

Steen: We have talked a little bit about how you get your assignments, and how you know what Sierra Club policy is. When you go out and testify for the club, how do you know that the board agrees with what you're saying?

Robinson: That's a good question. At first, I was very reluctant to speak on behalf of the club without having somebody check a written statement for accuracy, to make sure it squared with policy and that sort of thing. I'd take a draft of a statement I was going to present on behalf of the club to Mike, and ask him to review it. He'd say, "Why bother me with it? You're the expert," which was flattering, but it was inconsistent with my ideas of how one should go forth. I was very reluctant to speak for other people without their knowledge and consent, you know.

So what I would do was simply say I was a member of the club, and I had been for a number of years, I know many club members, I know the general attitude of the people, and while the club has no policy on this particular matter, I'm sure that the majority of the people would agree with me, and this is my opinion, something like that. That's the way I've handled it. It has proved to be correct. The situations have been very few where that hasn't been borne out. I think it's never been borne out that there was any major difference.

There are, in the eastern United States, several professional foresters who are active in the Sierra Club, and they pick at me from time to time, but usually without knowledge of what they're doing.

Steen: When we talk about Sierra Club policy, is there a place you can turn to find out what that is?

Robinson: Oh, yes. We have a policy guide, sure. There are several volumes about that thick of the policy decisions of the board of directors. With respect to particular things, I refer to that. There's very little in it dealing with forestry. It usually has to do with decisions to fight some particular bill in the legislature or support another one. Sometimes it will have to do with priorities among a variety of proposals.

Steen: Somebody there is looking at what's going on

in the forestry scene and saying, "Hey, here's something we want Gordon to do," and they get on the phone, and--so who determines what ought to be done?

Robinson: I guess it's Mike McCloskey and Paul Swatek. They ask me to do things, and I do them. They still regard me as the club staff forester, and their forestry consultant, although I'm not retained. Actually, they ran out of money. I think that's the main reason that they stopped the thing. They are just using the fact that I'm sixty-five as an excuse, [laughs] because they know very well I get along all right without their money.

Steen: It's interesting. I was chairman of the Santa Cruz Sierra Club group, and it was difficult to, even on a very small scale like that, maintain some kind of continuity of public posture on the issues. People are for what they like and against what they are against, and they stand up in a meeting and say that the Sierra Club is opposed to an idea, without ever clearing it, even at the local level. I just wondered how you operated, with very important lawsuits, on national scale. There has to be some way of--

Robinson: Oh, well, on lawsuits there is definitely policy. There's quite a routine. First, in order to file a suit, the local group has to make the proposal. Then it goes to the legal committee. I've forgotten just what the routine is, but there's a legal committee, made up of several attorneys who are members of the club, and then there's the executive committee, and sometimes the board. Now, if it's an emergency situation, there's a way of handling that.

EXCELLENT FORESTRY

Harold Steen: Let's talk a bit about Excellent Forestry. Referring to your own publication [See Appendix C], you say excellent forestry has four characteristics. First of all, cut must be matched with growth. The idea of sustained yield.

Gordon Robinson: Yes.

Steen: Is this a biological concept? Are you dealing with soil productivity? How about sustained yield in other concepts like the government has used to stabilize communities with sustained yield units. It's no longer biological, but it's economic.

Robinson: Oh, no, no, no. That refers to the biomass of the forest.

Steen: Your definition?

Robinson: Oh, yes.

Steen: Are you sympathetic with the concept of sustained yield as developed by the Forest Service? For example, the Simpson Timber Company in Shelton, Washington, where a substantial portion of the Olympic National Forest has been reserved by contract for ninety-nine years to supplement the private holdings thereby maintaining the economy of that area.

Robinson: I'm not familiar with the details of that, but I suspect I don't like it. I suspect that if I understood, if I had all the facts, that I would object. It's simply because there I think that the sustained yield of the public land is being rationalized away to compensate for failure of the private lands, whoever owns the private lands to have managed them for sustained yield prior to that agreement. I think that

sustained yield has to apply to one's own holdings or to each administrative unit.

You know, one time I used to manage Southern Pacific Company's timberlands for quite a number of years. I was out in the woods with Jude White, who was vice president of International Paper Company, and in charge of the Longbell Division. He had been the president at Longbell. Well, they were negotiating for a purchase of about one third of Southern Pacific Land Company's holdings in Northern California, the whole Trinity River drainage. And I was simply not going along with him, because he wanted more timber than could be sustained from our land, you see. And so one time he says, "Hell, Robbie, we're on sustained yield. When we clean up the timber in the west, we'll return to New England where the industry began."

Steen: So, it's very definitely a local working circle or watershed...

Robinson: Yes, of course. That is just an attempt to subvert the whole principle, and it's wrong. The Forest Service is doing that in varying degrees on the national forests. The big battle I have been conducting on behalf of the Sierra Club is to try to expose it and get it corrected. We haven't succeeded so far. But the national forests are not being managed for sustained yield, as I interpret the law.

Steen: That's it?

Robinson: As I interpret the principle. Because they are cutting more than can be sustained.

Steen: I think I know your answer, but comment on the economist's view that letting market determine yields, rather than a biological concept, that supply and demand will balance based upon price. As timber becomes scarce, it'll become more expensive. We're going through this right now. So demand will taper off and, at some point, demand will equal supply because scarcity will affect price. Are you confident or

comfortable with the idea of letting the market determine the rate of...

Robinson: Certainly not! Economic conditions or criteria have no place in the decision making of sustained yield forestry.

Steen: Is that for both public and private lands?

Robinson: Oh, I'd say so, yes. The thing is, it takes longer to grow timber than a prudent investor can wait for a return on his investment. And so money is not invested in forestry. It's invested in public relations to make people believe that they're practicing forestry, because they don't want public regulation.

The Forest Service, as part of its responsibility through the experiment stations, which were set up I think under the McNary-McSweeney Act in 1928. The initial purpose and the continuing purpose of those experiment stations is to conduct periodic surveys of the timber resources of the United States. The first one was published in 1933, and was called the Copeland Report. And then the second was the Reappraisal in 1945, and the Timber Resources Review, 1953; Timber Trends, 1963; and the Outlook for Timber, 1972.

All right, every one of these shows a great deal more cutting than growth on all the forest lands in the United States, and of course, one third of the country is forested. The most recent figures, now that's the one from the Outlook for Timber, with 1970 being the resource base, shows 48 billion board feet of saw timber being cut annually against a growth of only 40 billion board feet.

That's the measure of the failure to balance our resource budget. Now I've forgotten what I've gotten into.

Steen: What I am getting at on the question of sustained yield as a biological, as opposed to an economic concept, is based upon the industry's

attitude today that the market ought to control supply, rather than the productivity of the soil. Otherwise, you have fixed supply regardless of demand, and they are claiming more and more that this causes the greatly fluctuating prices in the lumber market. So in that context, let's talk about sustained yield and your preferences.

Robinson: Yes. The big problem is, as I said earlier, it takes longer to grow timber than a businessman can afford to wait for return on his investment. For this reason, if we are to continue to have forests, we must have artificial constraints on the cutting of timber. That's why I emphasize sustained yield. In a free market, when people can readily find opportunities for investment that will give a greater return than forestry, they're not going to invest in forestry. This has been our problem from the beginning of the timber industry.

Steen: You're not really confident that the market system, then, will sustain the forest. They'll take their capital and invest it elsewhere?

Robinson: Right. That's what they're doing all the time. Industry has continuously hunted for a body of timber sufficient to last them while they write off their capital expenditures in plant, and then having cut the timber--then buying more, whatever they can get around that vicinity, when they have exhausted the timber resources available to them, then they close the mill and move on. This is still happening. Even Weyerhaeuser Timber Company today is planning to move into British Columbia and into the South, out of the Pacific Northwest.

I have a copy of a speech made I think by Lowry Wyatt--it was either he or George Weyerhaeuser--to the security analysts, four or five years ago, in which he explained that the forest lands of the Pacific Northwest are the most productive forest lands in the world. But unfortunately, they cannot compete with British Columbia or the eastern United States and the South, because of transportation costs and

because of the differential in labor costs. So they are liquidating their timber resources in the Pacific Northwest, and they're moving into British Columbia and the South.

Steen: I don't want to put words into your mouth, but are you saying at least to some degree that you're very suspicious that when a company has fully depreciated its mill, its interest in sustained yield, as it were, might vanish there, and rather than re-investing in a new mill, it might just abandon the whole idea?

Robinson: Oh, yes. They do. That's the history of the timber industry.

Steen: You don't feel that that's changed on the west coast? Obviously in the Lake States it hasn't--

Robinson: No, it has not changed. That's the thing. Like today, we see that there's timber in the north counties of the coast of California to last only another ten years or so, based on Oswald's recent report from the Pacific Northwest Forest and Range Experiment Station. We have reports from the Pacific Northwest Forest and Range Experiment Station showing also that they expect a very drastic decline in the amount of timber available in the private lands in Washington and Oregon over the next twenty years.

Steen: Professor John Beuter at Oregon State studied the BLM lands in Oregon, the O & C lands, and pointed out that they had been overcut. I guess they're greatly reducing the cut on those government lands in southern Oregon.

Robinson: I pointed out some of the deceptions in the calculation of allowable cut on the O & C lands in Oregon at a public hearing some years ago, and was widely ridiculed for it. [Laughs]

Well, then, the reason that I insist upon sustained yield as one of the criteria for forestry is that without that basic premise,

you cannot manage a forest. It's one of the essentials.

Steen: All right. But if it's not economic, what are the conditions for an entrepreneur to hold on to forest land? Does society step in, in some way, and subsidize or use incentives? Do we want to keep the land in private ownership or do we want to acquire private wildland, so that we don't have to worry about this?

Robinson: The way I look at that is that in this country the basic structure of our government is that it be a democratic society, and that it be designed in such a way that reason can prevail.

The idea of free enterprise is given to the business community by the citizens, because we believe it is the most efficient way of getting our work done. But there is no sacred right to have free enterprise. We, the people, set the rules. If free enterprise doesn't work, then we change the rules. That's the way I look at it.

I think that forestry is simply not suitable to free enterprise. I think that many industries are, but I think that forestry is not, for the reasons that I mentioned earlier, that it takes longer to grow trees than people can wait for return on investment.

We must either therefore establish separate rules for management of private forest land or we must have public ownership, or we must abandon the forest--do without. We have to make up our minds on those three choices, it seems to me. I'm proposing regulation of a variety that will minimize the interference of government in the affairs of the businessman, and at the same time, provide for continuation of the forest.

But the basic principles that must be implemented by any such plan are the ones we are now discussing, these four basic principles of excellent forestry. I described those as

a starting point for attempting to bring about an application of what we know of forestry to the management of our forest lands.

I didn't want to get involved in nit-picking debates over details, so I decided that I'd take the initiative and just set the standard by describing what good forestry is. Then let the other people try to pick it to pieces, if they could.

Steen: It's fascinating to speculate how historians will look back. In his annual report about 1890, Bernhard Fernow said that forestry could not be practiced on private land because it was a long-term investment. The interest would eat him up.

Maybe it has never been feasible, but we have forced it, because that's, quote, "the American way." We have to have free enterprise, so we've created some kind of gross inefficiency, a system of forest management in the private sector that was doomed to fail ultimately.

Robinson: Yes. But I don't think that we, the people, forced this on the timber industry. I think the timber industry argued that regulation is contrary to the American way, and, therefore, we should allow the free enterprise system to work and give it a chance.

They've argued this way against every proposal to regulate the private forests that has been brought up since the turn of the century. There have been three or four major efforts, and each time they have succeeded in getting these bills defeated in Congress because of that argument, that it was contrary to the free enterprise system. But now we know it didn't work. They proved it.

Steen: But still, they worked awfully hard to practice forestry. They hired foresters, and they reforest. They're creating the illusion, at least in their own minds, that they want

to stay in business forever. Anyway, the future will judge how correct anybody is about all this, but it certainly seems to be a lot of hard work to make the system work, by people who pride themselves on efficiency and Yankee ingenuity and all the rest.

Robinson: The drive for getting more timber out of the national forest denies the validity of their own arguments. We know that the national forests are being cut greatly in excess of what can be sustained, and this is due to the response of the Forest Service to lobbying by the timber industry, which in turn is a response to their failure to provide for a continuing supply on the private land. So it's false, and they know it.

Steen: Let's go on to your second criterion for excellent forestry--growing timber on long rotations. Getting back to economics as opposed to biology, how do you handle the compound interest in the carrying costs of long rotations in an economic sense? That's the real world. This is industry's reaction to your--

Robinson: That is not the real world! The formula that is commonly used for determining the present value of an investment is appropriate for calculating the price one should charge for bonds, or for calculating the value of an investment where one is buying an annuity or something of that sort.

You can't use that technique for evaluating an investment in forestry, because the data that you have to have to make the calculation is unknown and cannot be known.

You would have to know what stumpage values are going to be at rotation age, or at the time the trees are going to be cut. Suppose you're considering the idea of planting some timber which will be mature in 70 years. That means you have to know what price the stuff is going to fetch in a free competitive market 70 years hence. We don't know what it's

going to be 7 months hence. You have to know what interest rates are going to prevail throughout that 70 years. You have to know what costs you are going to be involved with over that period of time. You need to know what risk is involved. And you need to know how much of this timber are you going to lose through insects and diseases and storms and fires. How much will come through. You have to know what the rate of growth is going to be.

We do not have answers to any of those questions. So what they commonly do is substitute present stumpage rates, present costs, and simply ignore the fact that they don't really have the answers to the questions. And then, perform a calculation. This, of course, always gives you an overly conservative valuation. But for that reason, you cannot use that formula.

Another approach is to see the forest as a whole rather than seeing the present value of a specific investment. In that case you would say, we have this block of timber and its growth or potential growth is rather carefully determined as so much and we have so much timber and so we have certain volume that we can sell under sustained yield annually. Now, we have an opportunity to increase that sustained yield by making certain investments such as planting.

The analysis then consists of determining the present value of the present increase in annual yield that would result from that investment. How does the cost of the investment compare with the value of the increased yield? Of course this is only valid where you have an excess of old growth timber as here in the West starting with virgin forest.

I developed this way of looking at investments in forestry as a method of persuading the board of directors of Southern Pacific Company to let me invest in some reforestation of Southern Pacific Land Company lands and to try and acquire some lands.

Steen: Since long rotations, by definition, accentuate uncertainty and risk, do you support the idea of increasing incentives to the private sector for that, such as, yield taxes as opposed to ad valorem tax, open space, tax write-offs, and so forth?

Robinson: Yes, I do, providing we, along with those incentives, have some requirements that people do the things that we are attempting to buy through the incentives. The costs of the incentives should be consistent with the social good that we gain for the expenditure. I approve of economics for making that type of decision.

Steen: Are you current on the legislation in California on timber protection zones that we're just getting into in the various counties?

Robinson: No, I'm not fully up on that.

Steen: Apparently it's in effect an amendment to the Williamson Act where you can set aside forest lands in the same kind of reserve. It's something to watch to see--

Robinson: Well, yes, I think that's appropriate. I think that's appropriate. I think that we must develop a combination of incentives and requirements that will bring about a sustained yield management of the private forest lands. At the same time, minimize the amount of interference with the owner. After all, the whole purpose of having a free enterprise system was to get out from under unreasonable bureaucratic control. We don't want to step back into that any more than is necessary to bring about a stability of our civilization.

But we are destroying ourselves now. So we must go back far enough to accomplish our purpose--balancing our resource budget.

I just thought of something else that I wanted to tell you about the use of economics in forest management decision making. You know, I think that we must recognize a hierarchy in

our decision making. It's a mistake to assume that all types of decisions are of equal importance. There's a tendency to do that. I think that it's basic that we make the decision first, and this is a moral decision, to manage our lands in such a way that we can perpetuate the resources wherever renewable resources are involved.

In the case of timber, it means sustained yield. The high levels of sustained yield. Once that decision has been made, then it's probably appropriate to use economic criteria for making the secondary decision, concerning the production of wood, lumber and materials from the wood that the forester makes available, and that sort of thing. But we must recognize that the basic decisions are moral decisions and should not be made in terms of economic criteria.

We need to make a clear separation, I believe, in the responsibility between the forester and the businessman. The forester should manage the forests. I am willing to see the businessman make all the money he can off the timber the forester makes available. But I don't want the businessman, or the guy behind the cash register, directing the forester.

Steen: Are you satisfied with the language in the Multiple Use--Sustained Yield Act that says that economics is not the sole criteria for determining the balance of uses? Is that strong enough language?

Robinson: No, I don't think it is. That act is ambiguous. But, I think that in the course of time, we will be able to bring about adequate interpretation of that law to accomplish the common good. I can see it coming.

Steen: Selective logging is best. That's your third criteria for excellent forestry. But how about--

Robinson: --using a selection system. Yes. Did we talk about rotations really?

Steen: You talked about growing timber on long rotations. The difficulties caused by carrying charges and incentives, and so forth.

Robinson: Oh, yes. Well, the reason I wanted to see timber grown on a long rotation is...is there's more to it than just that. It's the fact that many of the multiple use values of the forest are dependent upon the presence of large trees and the forest canopy. The longer the rotation, the more large trees there are on the land. And therefore, the greater are the wildlife values, the recreational values and the watershed protection, and so on.

Also, the higher's the value of the wood that's sold. Not the costs, of course. The longer it stands, why the more it costs, if one's thinking in terms of return on his initial investment, which is the theory I would not use, but the way people normally look at these things.

But the multiple use values are proportional to the length of the rotation; therefore, the longer the rotation, the better the management.

Steen: Do you have any difficulty advocating multiple use for private lands? The non-commodity uses of private lands? Should there be incentives, and how do we actually tell the private land owner that he has other responsibilities beyond maximizing his investment?

Robinson: Well, I guess you don't. The only thing that I know of that has been effectively done along those lines is in the South. I know several foresters in the southern states, in fact there's quite a group of them, who insist that one should manage the natural stands--that's their terminology--rather than using clearcutting and even-aged management. By managing natural stands, they mean what I mean when I talk about using a selection system or keeping the openings no larger than necessary to meet biological requirements. Two of these men work for competing banks in Mobile. Their position is that

when private land owners come to them for loans using their forest property as collateral, they cannot grant the loan unless there is a good distribution of age classes of timber on the land and the owner is committed to--or willing to commit himself to--a selection system because, thereby, he will be able to sell timber periodically. This gives the banks assurance that there are prospects of income from the use of the land.

Second, as long as there is a good distribution of age classes and some large trees on the land, that land can be leased for recreation at the same time that it is producing timber. These people make much of this argument as a means of persuading the local land owners to manage their forests rather than just letting the pulp companies come and clearcut.

Steen: It's interesting that banks, the stereotype would be very hard-headed businessmen, would adopt this view of a need for long term collateral like this.

Robinson: Yes. Well, a bank cannot loan money for twenty-five years without any prospect of income up to that period of time. It's just too hazardous. I don't know but what it's even unlawful. Prior to the Depression, it was unlawful for banks to lend money for more than three years at a time.

That's why we have the Federal Housing Act. That was an insurance set up by the federal government to authorize the banks which are chartered under state law, to lend money for more than three years to enable the people to buy houses with confidence and pay for them.

Steen: Did your forester friends in the South ever recount to you whether or not it was difficult to sell this concept to the bank?

Robinson: No, not to the bank. But it's difficult to sell it to the landowners, because everybody is constantly seeing a barrage of propaganda

by the Forest Service and the timber industry advocating even-age management and clearcutting. And it's difficult for these people to establish their credibility when what they advise people is contrary to what seems to be coming from the federal agencies and the big successful organizations, and all that sort of thing.

Yet these people approached the chief of the Forest Service trying to get him to desist on this, because it's making it difficult for them to do their job, bringing about good management of private lands.

Steen: Let's look at the fourth criteria for excellent forestry, "infinite care to avoid damaged soil."

Let me read you something--this is kind of baiting you, because I suspect you won't agree with all this. This is a Forest Service publication entitled "The Impact of Timber Harvest on Soils and Water," reprinted from the Report of the President's Advisory on Timber and the Environment, April 1973, on page 435. Let me read you this paragraph, to put your question in context about Excellent Forestry.

"Cutting a tree, even clearcutting, does not immediately change the water-handling capacity of a forest soil. Unless otherwise disturbed, the forest floor is still physically intact during the first few years. Water entry rates remain very high, and no overland flow occurs. Any increase in stream turbidity is minimal. Even on heavily-cut areas, regrowth of trees or other vegetation normally occupies the soil long before the stabilizing influences of the former forest have disappeared." Now, this is what the Forest Service says.

Robinson: That is a half-truth. Would you read again the initial sentence?

Steen: "Cutting a tree, even clearcutting, does not immediately change the water-handling capacity of a forest soil."

Robinson: All right. But logging does. There is research that the Forest Service has conducted about clearcutting, per se, as distinct from the removal of the trees that have been cut from the land. They find that it is the construction of roads and the skidding of logs to the landing, which causes the erosion and the damage to the soil, not the cutting of the trees. So that statement is valid, but it's tricky because it does not deal with the real subject. I think I said in the essay that you are referring to that foresters the world over are behaving as though the soil theory has somehow been exploded.

I have seriously questioned that very thing myself, because it didn't occur to me that foresters were really that careless. People like Paul Zinke, who have considerable stature in the profession, have been defending the timber industry's logging practices. So at one time, I questioned him on that.

I said, "Paul, can it be that I'm out of date, that there's been new information showing that the nutrients in the topsoil is not important for growing timber?" He said, "Oh, no, that's all valid." Well, then, why in the world--? [Laughs]

Steen: I find this intriguing from my background, both in forestry school and with the Forest Service. Soil was king, and there was no question about that. We did everything we could to protect the soil.

Robinson: But this is not the way that forests are being managed. The timber industry and the people who work with us selling machinery, designing machinery for them, are continuously designing larger, heavier machinery that gets the timber out more quickly and cheaper, and in a manner that's more destructive.

Actually, what I see that has happened in this country is that we logged the gentle topography first--most heavy stands of timber, and

the timber on soil that is relatively stable and less likely to be damaged. But as timber became increasingly scarce, the industry moved into the more--the steeper slopes and the more fragile areas.

But meanwhile, the industry was developing heavier and more damaging equipment. So at the present time, we are using the most destructive machinery, destructive techniques of logging in history, and we're logging on the most fragile lands that have ever been logged in history.

Steen: How much cable-yarding goes on in northern California?

Robinson: Oh, I don't think a great deal in northern California. But cable-logging itself is not as serious--it's a considerable improvement over tractor logging. You know, the term "cable-logging" covers a multitude of--I should say that it covers a variety of logging techniques. There's just plain cable-logging, ground-skidding, which is every bit as damaging as tractor-logging. There is high-lead, in which the butt end of the log is lifted up but the tail end is dragged. Well, that prevents some of the gouging up of the earth that is done by this ground-skidding.

Then there is skyline, in which the log is lifted clear off the ground and hauled to the loading place. That, of course, provides a great improvement over the other two. But in Redwood Creek, where logging techniques have been a matter of major controversy in the last few years, nobody is doing any skyline logging. All they're doing is ground-skidding, and high-leading. The topography is such that they can't get cables rigged up in such ways to lift the logs off the ground, and the logs are so heavy, these huge redwood trees, that it wouldn't work anyhow, they say. It would be so expensive they couldn't do it.

So the cable-logging is as destructive as the tractor logging at the present time, the way they're doing it in California.

Steen: Because of the more broken terrain, I guess.

Robinson: Because of that.

Steen: In the northwest, you have very long slopes, and you can put a pole on the top. Of course, it's clearcutting, but you only have one road and one landing. It's minimum road disturbance, at least.

Robinson: You can go about eight hundred feet with cable. You can go about four hundred feet with cable on the back on a tractor--four hundred feet up and four hundred feet down, and a road every eight hundred feet. You've got the same thing, haven't you?

Steen: Skidding into a landing, when you have the skid trails going up toward the spar tree, tends to disperse runoff rather than concentrate it. Downhill yarding is very destructive because of runoff.

Robinson: Yes, that's correct. Twenty years ago, the Forest Service was putting out photographs and illustrations showing the destructiveness from using cables, cables on the top of a hill, advocating the use of tractors. I'd be happy to show you one.

Steen: I was appalled by the photographs of that bit in Montana. The University of Montana got involved two years ago on the clearcutting controversy. It was just a mass of skid roads. I had never seen that. Terracing, I guess, besides. I never was quite sure what was going on, if that was an experimental project with the Forest Service--

Robinson: No, that's a full-scale program, and now that Guy Brandborg has died, they're returned to it. There's nobody there to complain about it, I guess.

There may be more on this, but there are two basic things they are doing there, and I object to both of them. One is removing

relatively undesirable timber, stands of lodgepole pine and alpine fir, and then terracing it with tractors and planting it to ponderosa pine. I object to it because of the massive disturbance of the soil and those ecological factors.

But the second thing I object to is that they are playing with numbers in doing this. They will take an area which is not productive, because it's naturally stocked with non-commercial species or species of very minimal commercial value. They will sell all that timber to the pulp mills for maybe two dollars a thousand board feet, and the price they pay applies only to the larger trees, the smaller ones go free. So they get 90 percent of it, or 80 percent of it, for nothing.

Having done that, they will take that area, terrace it, plant the ponderosa pine, and they will estimate what the average growth per acre per year is going to be, from that terraced land, and thereby increase the allowable cut by that much. Suppose you've got a thousand acres and it's going to grow, they estimate, five hundred board feet per acre per year. So there's five hundred thousand board feet they can add to the allowable cut. So they increase the allowable cut by that much, and then they escalate the removal of the old growth timber on that basis of that calculation.

They carried this kind of logic to an extreme, so that they have now cut almost all of the merchantable sized timber on that forest. One mill which used the larger ponderosa pine has closed, because there's no longer timber available to them.

Steen: I can't see how the economics works out. The site preparation must be a hundred dollars an acre, two hundred dollars an acre; how you can carry that up through the rotation--? Bring cats in and terrace it--

Robinson: Oh, I think they do it only once. They

just plant it, and they figure they'll go in and thin it periodically, but they don't consider that they have to reterrace it. I think they regard that as a one-time investment. However, I agree with you, but I haven't analyzed it mathematically.

Steen: At forestry school in class projects, we tried to make the cost of hand-planting pay--over a eighty-year rotation at 6 percent and all that. But if you're going to bring in equipment, do all this landscaping, and carry that plus the cost of planting--

Robinson: You're simply reiterating the things that I've said regarding sustained yield initially, that forestry does not pay in competition with other investment opportunities. This is why we have public forestry. I don't object at all to public money being spent for reforestation and for thinning and these things. I think that's desirable.

But I do object to selling timber in excessive quantities, violating the sustained-yield principle, stretching the definition of sustained yield to pretend they're observing the law while helping the lobbyists for the timber industry. That's the kind of thing that's happening. That's where the problem is.

Steen: But sustained yield obviously, through several rotations, is dependent upon maintenance of the soil.

Robinson: Yes. Oh, yes.

Steen: We can determine by the slope and the thinness of the soil wherever it shouldn't be logged--what do we do about that land that's in private ownership that's too steep, so it ought not to be logged? Do we acquire that? Do we buy the development rights? We're going to wind up buying an awful lot of land, it seems. Is that the ultimate solution to--

Robinson: Something of that kind is essential, I believe, yes.

Steen: Because to ask somebody to pay taxes on this stuff, which has market value, even though it shouldn't be logged.

Robinson: Right. I wanted to point that out earlier, and I see you anticipate me here. There is a lot of land that should not be logged, period. The fact that people own it should not give them the right to log, just because it's possible to make some money from it.

Steen: But say you own a sawmill, and you have enough acreage, based upon some calculations, to sustain that mill, and suddenly, for whatever good purpose, a portion of the land is removed from your cut. Even if you're reimbursed for it--

Robinson: By government action?

Steen: By whatever action.

Robinson: Public action.

Steen: Suddenly you only have 70 percent of the timber you need to run that sawmill, and you've just been put out of business. I think this is one of the arguments, isn't it, in Redwood Park, that that land has more value than the actual market value, because it impacts their sustained yield. It takes twenty years out of their rotation by pulling 45,000 acres out of there. This is one of their arguments.

Robinson: Oh, that's one of their arguments. But I don't think they have any rotation. I don't know any private timber company that really has a rotation. I've discussed this with some of the foresters from the big timber companies in the South, where they say they are really practicing forestry. And they don't have a rotation.

Steen: It's really when the tree gets marketable in forty years, eighty years--that's sort of the theoretical rotation age, in that sense, when it gets big enough to cut again.

Robinson: The foresters down there that I referred to did not want to be quoted, but two or three very large, nationally-known companies, who have huge holdings in the South, southern pine and pulp mills and that kind of thing, say they have a twenty-five year rotation on the growth of their timber, and they plant a fair amount. Rather large acreages, actually, but a very small porportion of the total amount of forest land in the South.

Now what they are doing is planting enough so that they can go to private owners and tell them that they'd like to buy their timber, and then tell them if they don't sell it to them, they've got timber of their own, so they can name the price. This again gets back to what I was saying, [laughs] that forestry's not profitable.

The owner has no alternative. If there's one big outfit in the community, and that's the one that buys the timber, and they tell them, "Better sell it to us, or we'll let you keep it," and he's invested money and he's held it for fifteen or twenty years, had to pay taxes on it, and he wants out, so he yields.

All right. So they grow enough timber to be able to pull that on the private landowner. But they're not practicing sustained yield as I interpret it, or as I defined it earlier in the conversation.

Steen: How in the world are we going to protect soil with that kind of a market system?

Robinson: Well, we're not. We're going the way of the North Africans, around the Mediterranean.

Steen: There must be some interesting data accumulating after our drought is over, and all the heavy rainfall. I don't know what's going on up north, but there must be a lot of slippage somewhere.

Robinson: Oh, I'm sure. I haven't heard a thing about that, but I'm sure you're right.

Steen: I've still got some questions to ask about soil. Maybe it's so self-evident that it doesn't require a lot of articulation, the need to maintain the soil--

Robinson: Well, that may be. There's some semi-technical things that I'd like to talk about. You know, I'm not a soil scientist, but I gather that there are four or five essential nutrients which must be present in appropriate amounts for vegetation to grow. They are calcium, phosphorus, potassium, magnesium, and nitrogen. There's five, I guess--that when they're in a form that is available to plants, are in a soluble condition.

Therefore, as land is saturated and water's running through it, these tend to be leached out. So in a normal situation, these nutrients are bound up chemically in the tissue of living organisms or in the humus, which is the decaying material of past generations of living material.

As these chemicals are released, the roots of living organisms pick them up and recycle them. There is no way of determining how much of these nutrients are available to plants, through any chemical analysis that we know of. When I was in the university, back in the 1930s, Dr. Holman was our professor, and he had us all get a textbook by Maximov, translated from the Russian, because there was no such textbook in the English language.

Maximov explained that there are two ways of going about making an analysis of soil. One is to take a soil sample, dissolve it in distilled water, and then make a chemical analysis of that water to determine what proportion of these essential nutrients are present. This underestimates the amount grossly, because plants have the capacity of extracting nutrients that will not dissolve in distilled water. They are held in the soil by colloidal phenomena.

The other extreme is to take a sample of the soil and give it a standard chemical analysis. This grossly <u>overestimates</u> the amount that's

available to the plant, because it results in measurement of stuff that cannot by any stretch of the imagination be available to these plants.

Now, the range of availability to the plants, from paucity to surfeit, is so well within the range of these two methods of estimating the amount that's present, measuring the amount present, that there is no way of determining the fertility of soil by soil analysis.

So what you do is get a sample of soil and plant things in it and then add small quantities of the various nutrients to these in various combinations and measure the growth to see if addition of any of them causes an increase. If it does, then you realize--you infer that that nutrient is lacking in sufficient qualities and so forth. That's the only thing you can do.

But you can't do this effectively with forest soils, because trees require different nutrient combinations at different stages of their development--I should say, plants do--and the nutrient requirements vary from one species to another.

So actually, in the long run, the only test of the nutrient supply in the effective capacity of the soil is to grow timber on it. But we do know that, as I said earlier, the amount that's present is generally bound up in the humus material, and therefore it is definitely essential that we maintain that nutrient supply by protecting the soil.

That's what I'm trying to get at. There's no question about it. And a logging technique, or the silvicultural methods that expose that soil to erosion or leaching by water without there being vegetation present to protect--you know, to take up the nutrients that it would leave--is going to lead to a decline in the productivity, and there is no question about it.

Steen: How about what some of the companies are doing, at least in the pilot project phases--dropping fertilizer from helicopters and this

sort of thing. Is that an alternative, or a way to maintain soil productivity?

Robinson: It can help in some situations, but again, that is very expensive. It costs a great deal of money. I'd like to fertilize, and fertilizer is becoming increasingly expensive these days because it is dependent upon energy to manufacture, or to mine it. You know, the nitrogen compounds are manufactured, and the others are mined. As the food supply becomes scarce, and as the population increases, we're not going to be able to use fertilizer for growing trees.

Steen: Yes, we're going to have to use it for food.

Robinson: That's one thing. For another, experiments in fertilizing are not consistent. I know one experiment in Douglas fir which resulted in a dramatic increase in the rate of growth of the young trees, but when it snowed, the limbs broke off because the wood was more rapidly grown and therefore not as strong.

I know of another experiment where fertilization increased the growth of competing vegetation, but it interfered with the growth of the trees. There is an experiment which recently reported--which shows that fertilization interferes with the growth of mycorrhiza. The mycorrhiza are essential to the growth of trees. So if you kill the mycorrhiza with fertilizer, then you're defeating yourself.

So unless the person has done a great deal of very careful research over a period of time, really, to check his hypothesis out, he isn't even sure that fertilization will do any good. So I'm skeptical about that.

No, I think the best thing to do is to protect the nutrient reservoir that's there by using the most conservative methods of forestry imaginable. [Laughs] That's what I'm describing.

Steen: Another problem, I suspect, of using fertilizers is that it leaches out and raises the nutrient level in lakes, causing algae blooms and whatnot.

Robinson: Yes. If you clearcut the whole watershed, that definitely does occur. If you are practicing sustained yield, that is limiting the cut to growth, so that you're cutting, clearcutting only a small portion of the watershed at any one time, and using a reasonably long rotation, you're not going to materially affect the quality of the water, I don't think. But you are, nevertheless, depleting the soil gradually, and you have other difficulties arriving from--

Steen: No matter how carefully you practice forestry, how correct you are, after the fourth or fifth rotation, when you keep taking out the trunk, aren't you depleting this reservoir?

Robinson: Oh, definitely, you are. Yes. The nutrients in a forest are distributed approximately 80 percent in the tree and around 20 percent in the humus. Now, this would be in the coniferous forest. With a hardwood forest, it varies dramatically during the year, depending on whether the leaves are on the ground or whether the trees are leafed out.

We base that estimate on knowledge about the growth capacity of soil we know that it has impoverished, or are impoverished to begin with. For example, in Alaska, on Kodiak Island, which is the frontier of the advancing forests, following the last ice age, the soil there is pure glass beads. It's almost microscopic, it's dust. Volcanic dust from Katmai, which periodically erupts.

Herbs and grasses and various things take root in this volcanic soil, and over a long period of time they build up a sufficient nutrient reservoir so the trees can get started. And the trees will grow very, very slowly at first, maybe an inch or two in height a year, until they get to be about a hundred, hundred and fifty years old. Then they begin recycling their own nutrients, and then they get bird droppings, you know, from birds that are perched in the trees and all that.

Eventually the nutrient reservoir builds up, so by the time trees are several hundred years old, the indications of site, by measuring these trees, is relatively good. So the site improves as the trees grow and collect and recycle the nutrients.

So there is one good way of determining this business that I just expressed, that the nutrient level is largely in the standing timber.

There are similar situations that have been studied in the South, in lands that were impoverished by having been cleared and then used for cotton plantations for many years, abandoned when they became infertile to the point that they couldn't compete, and now are coming up with pine. There again, the pine grew slowly at first and the rate of growth, and the nutrient present, has become the key to this.

From there on then, we find that measurements of the nutrients in trees are about 20 percent in the roots, about a third in the bole of the tree, and the rest in the branches and leaves. So if you leave the roots, and you leave the branches and leaves, and merely take out the bole of the tree, and you're practicing forestry on a relatively long rotation--as I'm advocating--the probability is that the nutrient reservoir will be maintained, that during the growth of those trees, what's been removed by removal of the bole of the tree will be replenished, as is happening in Alaska.

Steen: So the care of the soil goes far beyond just preventing erosion. You're also maintaining the nutrient reservoir.

Robinson: Right. But this, of course, what I've just said, points up the fallacy of whole-tree logging.

Steen: With helicopters.

Robinson: Yes. Somebody in the South has recently developed machinery that will cut out the roots--

Steen: I saw that, on the SAF tour last year in New Orleans. We went out to Mississippi on a field trip, and we saw one of these things. It would go up to a tree up to fifteen inches in diameter and grab it with two big steel hands and rip it right out of the ground. Now I don't know what the price of energy is. The thing had to grunt and groan for about thirty seconds [laughter] before it would rip this thing out and then throw it down and grab another one.

But they claimed that it would increase fiber production 22 percent, or some such thing. I didn't realize that much was stump. But anyway, it was an increase in fiber, but it looked like Vietnam, with all these little bomb craters all throughout this area.

Robinson: But you're certainly removing the nutrient reservoir, and that is dangerous.

THE TEXAS LAWSUIT

(Interview Date: 20 September 1977)

Gordon Robinson: I have been involved in some things that the club does not approve of, and I don't want anyone to be confused about what I'm doing. I'm thinking specifically of a case in Texas.

Harold Steen: That's a specific case I wanted to explore. It was, officially, Texas Committee on Natural Resources versus the U.S. Forest Service.

Robinson: Oh, that's a good story.

Steen: It's a good story. How did you get involved? You've already said that this is not an official Sierra Club lawsuit.

Robinson: No, it is not. Along about January 1976, I began getting phone calls from a woman named Madeline Framson, in Houston, Texas. She was very disturbed because the elected officials of the Houston Group, of the Lone Star Chapter of the Sierra Club...

I should digress a bit to explain to the people who may not understand that the work of the Sierra Club is done by groups and chapters. And we have some forty chapters, throughout the United States and Canada. And the chapters have representation at our board meetings through the Sierra Club Council. There got to be so many of these that we have in addition groups which report to the chapters. So that we can remain democratic without the expense of the board meeting becoming unmanageable. So we have some 200 groups in addition to something like 40 to 50 chapters.

So the Houston Group of the Lone Star Chapter of the Sierra Club--it's elected officials--was cooperating with the Forest Service in promoting an 1800-acre wilderness

on the Sam Houston National Forest. Madeline Framson was very concerned about this, because she and a group of friends, including the Bonnys, who had organized the Lone Star Chapter, had built what is known as the Lone Star Trail in the Sam Houston National Forest, under a written agreement with the Forest Service. A large segment of that trail would not be included in this wilderness, and was scheduled to be clear-cut. And this just made them wild.

The Forest Service wanted to go put interpretive signs along their trail showing, you know these tree farm signs and all this stuff about rationalizing their clearcutting and stuff. And here the elected officials of the club were supporting that. She thought that the minimum wilderness proposal should comprise about 4,500 acres. She wanted to know what to do about it.

I didn't want to -- it would be totally improper for me to get involved in the local politics of the club. So the best I could do was to just listen patiently and give her what encouragement I could. But then, one time, she called and said that the Forest Service had scheduled a charette.

A charette is a public meeting designed to bring about public participation, rather broad participation in planning for land use. It's a type of meeting developed by French architects for bringing dissenting parties together where they are involved with land use planning. They will invite several hundred people for a weekend, and that way they get a cross-section of the people who are the various interests. Then when they arrive, they are divided up into small groups, each representing the cross-section of interest groups. Then each group is sent off with an advisor and recorder, and stuff like the group dynamics that we developed in this country in the 50s. Then they all get together and compare notes. And lo and behold, they all have substantially the same plans and so they're all expected to get behind the architect's design.

So the Forest Service scheduled one of these to consider planning on the Conroe unit of the Sam Houston National Forest, which contained this proposal. Meanwhile, they were going ahead with their plans to clearcut within the 4,500 acres that she thought ought to be considered for wilderness.

I asked her if she had an attorney, because it occurred to me that it wouldn't be too difficult to develop some kind of a legal theory whereby they could get an injunction against tampering with that 4,500 acres up to the time when they at least come up with the results of this meeting. It seems to be a great breach of faith to go ahead and foreclose the alternatives that they're inviting these people to consider.

Steen: Right.

Robinson: The next thing I knew, I got a phone call from one Ned Fritz in Dallas, telling me he was preparing to file suit against the U.S. Forest Service to stop them from clearcutting on the national forests.

Steen: Fritz is an attorney?

Robinson: He is an attorney, right. He wanted to know if I knew Madeline Framson. "Yes. I had suggested that she get ahold of somebody. And I guess you're the one." "But I'm not going to file on the behalf of Madeline, but rather, in the name of the Texas Committee on Natural Resources, and I'm the executive secretary of that organization. Will you help?" "Well, of course, what do you want me to do?" And he says, "Well, I'm filing suit on the grounds that clearcutting is a violation of the Organic Act of 1897 using the Monongahela decision as a precedent." And I said, "Ah, oh! Hold the phone!"

Because at that time we had won the lawsuit in West Virginia. So our strategy was to try to prevent that decision from being applied to other

areas of the nation through court action, because the timber industry would use it as ammunition to gain momentum for bringing about repeal of those provisions of the Organic Act, you see.

So I asked him to please check with our lobbyist in Washington and the attorneys in the Sierra Club Legal Defense, and so on, before proceeding, to see if he couldn't develop some other theory. I urged him to use the Multiple Use Law. He says, "All right, I'll check."

The next thing I knew, he had filed suit anyway, using that Monongahela decision. Well, of course that made everybody furious. And the Houston group was furious with me, and they phoned and wrote very nasty letters to Mike McCloskey about the Sierra Club being involved in a matter and taking the position diametrically contrary to that of the group.

They explained that the Forest Service was proposing this 1800 acre wilderness and the timber industry had agreed not to oppose it. Senator Towers had introduced a bill to bring about study of that area. Now as a result of the fact that the Sierra Club forester was going to be a witness in a suit against them, Towers had withdrawn his bill, the Forest Service said that they will withdraw their support for the wilderness, and the timber industry says that we will fight every wilderness proposal that comes out from now on. And it's all your fault! [Laughter]

Oh, and Brock Evans was mad at me, too. I don't know how, but it got in the papers that Gordon Robinson, Sierra Club forester, was going to be the witness for them. I discussed it with Mike McCloskey, and he said in effect, "Well, you've got to help them. But do it on your own. Just don't involve the Sierra Club. You can do it on your 40 percent time, can't you?" I said, "Well, sure." "But check with Jim Moorman, who is our attorney."

So I checked with Jim. And he said the same thing. "Oh, well, you have to help them. Maybe

you can pull their chestnuts out of the fire. But, but, for Heaven's sake, make certain that it's on the record that you're not doing this on behalf of the Sierra Club. So I agreed with Ned that that's what I would do.

Then Ned phoned and said, "We're going to trial next Tuesday. The court convenes at 9 a.m., Tyler, Texas. I want you to come and examine the forest and look at the proposed timber sales so that you will be prepared to testify that they're in violation of the Organic Act."

I said, "Well, now, Ned, I have a speaking engagement in Portland, Oregon, at noon on Monday. There is no way I can get there." He says, "Well, can't you get to Texas after your speech Monday and go look at the forest and be bright-eyed and bushy-tailed at 9 o'clock Tuesday morning?" And I said, "Ned, no, it's not possible." [Laughter] I thought I was off the hook.

He said, "The judge is very reluctant to postpone the hearing." I said, "Well, that's just too bad. This is an engagement that I made six months ago and I am not going to break it." He says, "Well, all right." He called back a couple of hours later and said, "The judge has postponed the hearing until Wednesday. Now will you come?" I said, "Oh, God. Well, all right. I'll come."

I took a plane out of Portland Monday afternoon, got to Dallas at midnight, and I was met by the conservation chairman for the regional conservation committee. Howard Saxion was his name. He took me to his apartment for the night, and the next morning we drove some several hundred miles, and saw this forest. We picked up a professor at the university at Huntsville, also interested.

So we went out to this timber sale, one in particular; I guess we looked at two of them. So I got out the Monongahela decision. The Organic Act specifies that the secretary of agriculture may sell only the dead, matured, and large growth trees.

Steen: Right.

Robinson: And the trees to be sold must be marked and designated; not marked or designated. Marked and designated. And trees to be sold must be cut and removed to prevent high grading, of course. I got out the judge's decision and read his definition of mature. Essentially it meant trees that have virtually ceased in their height growth and are slowing down in their diameter growth.

Well, we looked at these trees. All of them were marked. All they were selling was pine. Every pine tree had paint on it. And they were branching out, flattening out at the top, which meant height-growth was virtually over. I bored them with my increment borer and found that the growth rings were becoming quite close together. Therefore, according to the judge's decision, they were mature. They varied in size. There were some that big and some that big, but they were mature.

So I simply told them, "If the contract requires that they remove the timber that's to be cut, they are in agreement with the Organic Act, and there is no--"

Steen: No case.

Robinson: --no case. We got back to Tyler that night, at midnight. Up the crack of dawn the next day to the court house, and there at eight-thirty I met Ned Fritz for the first time. [Laughter] He says, "What did you find?" I told him. Then he said, "We can't use you as a witness." I says, "Yes, you can. Put me on the witness stand and ask me what's wrong with clearcutting?"

He says, "All right, all right. But I'm not the attorney. I want to be a witness, so I hired Bill Kugle to be the attorney in this case. I want you to meet Bill. Come on over." So we shook hands with Bill. He said, "But we don't have time to talk to you now. I have to line up these other witnesses."

Here these guys were, putting their nationally important case together a half hour before the trial was to begin. They do things different in Texas, I guess. [Laughter] Anyhow, Ned says, "Well, I don't know if he'll remember." I said, "Well, that's...that's what I want you to do anyway."

Lo and behold, in the middle of the afternoon, I was on the witness stand, and Bill Kugle said, "Now, Mr. Robinson, tell us just what's wrong with clearcutting, anyhow." I leaned back in the chair and I...this was the moment I'd been waiting for...Gosh. So I turned to the judge and I says, "Your Honor, do you mind if I just hold forth on this subject?" The judge says, "Go right ahead."

I didn't realize it, but it happened that I pulled a coup, because by getting permission to just orate on that subject from the judge, I foreclosed the opportunity for these attorneys to keep popping up and objecting on the grounds that I wasn't answering any specific questions.

Steen: But the attorneys didn't object to the basic permission to go ahead?

Robinson: No, no.

Steen: The Forest Service attorney didn't say, "I object" on some grounds?

Robinson: No. The judge just said, "Go right ahead." There were eight attorneys there, too, on the other side. Two for the Forest Service. Two for the Texas state forest service. Two for the timber industry. And two representing the lumber companies that were involved in the particular sales proposals. Well, they were just looking at me like snakes, [laughter] while I was on the witness stand. It was funny.

Then I told the judge, "I would like to get a copy of the Multiple Use Law from my briefcase. Do you mind if I step down for a minute?" He said, "Go right ahead." So I went over the thing, and I read the definition of

multiple use. You know, that's very ambiguous. Apparently, lawyers feel an obligation in saying something to put it all in one sentence, and it's a whole paragraph, which is one sentence, and it's almost unreadable.

So I turned to him and said, "Now I grant you that is like a horse designed by a committee. But, I think the meaning becomes clear when we read the definition of sustained yield."

And then I read, "Sustained yield of the several products and uses 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. All right, now I interpret productivity, in that definition, to refer to all of the multiple uses described in the definition of multiple use." Okay? All right, and I proceeded to give him about a forty-five minute lecture on that.

I won't give you that lecture, but basically, I said, "Clearcutting impairs the productivity of the land because it increases the fire hazard, there's lots of incendiarism in which young plantations of pine are destroyed in the South, and this is one of their major problems. It increases the amount of erosion that takes place, exponentially in proportion to the size of the clearcut. It results in the leaching of nutrients, likewise, exponentially in proportion to the size of the openings. This is demonstrated through Forest Service research, and some research in Japan, incidentally. It leads to plantations or stands of timber the same age and frequently of the same species and, thereby, increases the hazards from insects and disease, because most insects and diseases attack trees or a particular species or a particular age."

And I pointed out that the present epidemic with pine beetles in the South is very likely the result of the fact that there are large areas of even-aged stands of southern pine.

There are other examples to support that. It over simplifies the ecology by reducing the number of species and, thereby, destroying the subtle interrelationships of species upon which the security of the ecosystem is based.

And I pointed out things like the fact that dogwood is a calcium pump, which replenishes the calcium supply in the top layer of soil where the roots of most trees are. That kind of thing. It destroys the habitat for many species of wildlife, like hole-nesting species who have an important part in the ecology. And, finally, it destroys the recreational values for long periods of time. And, in all these respects, in my opinion, it is contrary to and is a violation of the Multiple Use-Sustained Yield Law.

I had to leave after that, because I had a speaking engagement in Dallas. I suppose Howard Saxion had set up a meeting with the Dallas group, hoping that I would make friends with them and thereby counter balance the animosity that developed in Houston. [Laughter] I don't know, but anyhow, that's what I had to do that night.

Next morning, I called Ned to see what happened. He says, "Well, the judge had another case he had to try today so he held a night session. But we adjourned at ten o'clock last night, and on adjournment, he asked me into his chambers and ordered me to prepare a statement of findings. I'm doing it now; come on over and help."

So we went over to his house, and he handed me one of those yellow pads, and he says, "Here. Summarize what you said on the witness stand yesterday." For a moment, I guess I had stage fright or something. I just couldn't start. Finally, he says, "Well, clearcutting impairs the productivity of the land because..." "Yeah, yeah, that's right." And so I wrote that. [Laughter] I summarized approximately as I recited it here a moment ago.

Then I had to leave to catch my plane to come home. On the way home, I had some afterthoughts. I wasn't sure that I had actually mentioned one of those points from the witness stand, and didn't know what effect that would have. I thought we would have to see the transcript to make sure. I had some additional thoughts. He said, "Oh, well, it's all done." I said, "What do you mean?" He says, "Well, we finished the statement of findings and took it down to the Greyhound last night at eight o'clock, my wife and I did, and we gave it to the driver and phoned the judge. He went down in Tyler at ten o'clock and picked it up, and now I have to leave because he's rendering his decision this afternoon. He's calling court to order, and I have to be there."

Well, there's two hours difference in time. It's a two hour drive. I knew what he meant. "But he's using your statement of findings verbatim. That is, I think he is. I gave it to him verbatim."

Steen: The image of using Greyhound for a courier for this important document boggles the mind!

Robinson: [Laughter] Yeah, I know. The whole thing, it's crazy! It's almost like a Mack Sennett comedy. But anyhow, that's exactly what the judge did. He gave them a temporary injunction against clearcutting on the national forests in the state of Texas, on the grounds that it violated the Multiple Use-Sustained Yield Law. He used my statement; there was a lot of other stuff in it, but he did use that.

That, to me, was the thing that's critically important in the big picture in trying to straighten out the Forest Service. I understand that this threw the Forest Service into panic, that the people were pacing the halls in the South Office Building the next day. But I never heard much about it really.

Steen: What's happened since the injunction? What's the status...?

Robinson: Well, all right, the trial took place on December 6, I believe, in Texas. That hearing was just for the injunction. But the formal trial lasted three weeks beginning the sixth of December of last year. And we got the decision, I guess, about three months ago.

It's essentially the same as we had before. The judge granted a permanent injunction against clearcutting on the national forests in the state of Texas. He cited all of these findings; in fact, he elaborated on them considerably from the way they appeared in his findings that I helped write. I'm told that the judged worked for three months on that. He spent every weekend on it for three months and wrote every word of it himself. He elaborated on those points from material that was introduced in the trial.

For the trial we brought together witnesses who could support those specific points, as much as we were able to find. We didn't have much money to work with, so we couldn't do it all. So what we couldn't do was supported by Forest Service documents, which I introduced.

Well, the judge said that he was not, after reciting all these ways in which clearcutting impairs the productivity of the land, he said that the court was not addressing itself to the question of whether or not they were violating the Multiple Use-Sustained Yield Law at this time. In view of the impending regulations, which the Forest Service is required to prepare under the Forest Management Act and these are due, I think, October 1, 1978. However, he did find that their impact statement was inadequate. (I've got a story about that, too. Well, I'll stick with what I'm saying here.)

For that reason, he is issuing this permanent injunction until they come forth with an impact statement that is satisfactory to his court and the Environmental Protection Agency. I read that to mean that the impact statement will have to deal adequately with those points. If they do that, and continue to clearcut, we

will then have a document, which can be used as evidence in court to force them to practice multiple use as defined in the Multiple Use-Sustained Yield Law.

Steen: This whole case has received very little publicity.

Robinson: I know.

Steen: Particularly the decision. The only item I've seen in print is in the National Forest Products Association Newsletter.

Robinson: I have not seen that.

Steen: It's just a brief paragraph describing the decision. It says what you said that the environmental impact statement was inadequate under the Environmental Policy Act. And that the impact statements have to be submitted to the judge for approval for clearcutting in Texas.

Robinson: Yes, yes. And it has to be a programatic impact statement. In other words, it has to deal with the whole philosophy of clearcutting in the southern pine forest and not just with a few timber sales or with a particular management plan.

Steen: You had a story about the impact statement.

Robinson: While I was on the witness stand, Mr. Ulmer, the attorney for the defense, and a very nasty person, [laughs] picked up an environmental impact statement for the Conroe Unit. He said, "Mr. Robinson, have you seen this document?" I said, "No, sir." He said, "This is the final impact statement for the Conroe Unit of the Sam Houston National Forest, and you have not seen this document?" "No, sir."

"Well, why haven't you seen that document? This is basic to this case!" I said, "Well, I suppose that nobody put that in my hands during the time that I was awake and working in preparation for this trial. I don't know what else I can tell you."

He said, "Do you mean to tell me that you have come here as an expert witness in this trial, which has tied up the timber industry in the state of Texas, and threatens the timber industry throughout the entire United States, and has cost any amount of money to bring in witnesses from all over the country, and you have not even read this essential document?!" "That is correct."

The judge said, "Just a minute, Mr. Ulmer. Mr. Robinson, do you intend to be here--do you plan to be here throughout the course of this trial?" I said, "Yes, I do." He said, "Do you mind studying this document, and then sometime during the course of the trial giving me your opinion?" I said, "I'd be glad to do that. Thank you very much, your honor." [Laughs]

So I was provided with a copy of the thing, and later in the trial I presented my findings, that they were essentially--as I just told you--that they never considered the possibility of anything but clearcutting and even-age management.

Steen: For such a potentially far-reaching decision, there was little public attention.

Robinson: Yes, I puzzled about that. I can tell you a few things about the politics of the judge in this, if you think that would be of interest.

Steen: By all means.

Robinson: This judge, William Wayne Justice, is a liberal democrat from the South. He's been going to the national Democratic conventions for a number of years. He was appointed by Johnson to the federal court I presume to pay off a political debt for his support. He's a leading political figure, or has been in that community; of course he's withdrawn from that now as a federal judge.

He proceeded to hand down some decisions that are very favorable to the Blacks under the Civil Rights Act. He became the hero of the minorities in the South. But he also became the enemy of the reactionary people in the South,

and they've been threatening his life and all that sort of thing. I guess a good deal of that sort of thinking emanates from some of the old timers who live out in the woods.

Now those same people were bitterly disturbed by the clearcutting, because this destroys much of the habitat that they require. See, they're living pretty much the way the Indians did before the whites came. They're hunting deer and possums and squirrels and all that kind of thing. The game population is way down as a result of their clearcutting, you see. And it disturbs them mightily; also they don't like the appearance of it. So Ned Fritz brought in several of these people as witnesses to testify to what's happening locally.

Let me give you an example of the sort of thing that happened. Mr. Ulmer was one of these fifty-thousand-a-year attorneys for some big law firm in Houston representing the timber industry. He's a very nasty man, but very smooth. At one point, one of these old gentlemen was on the witness stand, and he says, "Your Honor, I object to that man testifying on the subject of silviculture! That man doesn't even have a grammar school education! He is not qualified to discuss silviculture and matters of that kind!"

The judge says, "Mr. Ulmer, I must remind you once again, this is not a jury trial. I will decide what evidence is relevant to this case. Your objection is overruled. I'd appreciate it if you would not harass the witness. You may proceed."

So the old guy proceeds, and he says, "After they clearcut, then the brush comes up so thick an armadillo can't get through it." Everybody laughs, you know. But you see while the judge is fair and he's open-minded and concerned about these things, also in his mind is the opportunity to ingratiate himself to these people, who are disturbed because of his Civil Rights decisions, you see.

Steen: Interesting commentary on the law, the way things work out.

Robinson: Yes. But he's a genuine man, and he's not doing anything he doesn't believe in, I'm sure. But he's taking advantage of the opportunity to put it all together.

(Interview date: 3 October 1978)

Steen: The U.S. Circuit Court of Appeals, on May 8, 1978, overturned the U.S. District Court ban on clearcutting in Texas, saying the appellate court ruled that the district court judge, William Wayne Justice, had improperly intervened in a matter governed by Congress, through the National Forest Management Act in imposing the ban.

As you said before the recorder was turned on, this has now been appealed to the Supreme Court. But, for the sake of discussion this morning, if the Supreme Court refuses to hear it or upholds the circuit court judge, how do you judge the success of that lawsuit?*

In the earlier interviews you were in good spirits, because it looked as though at least you had won a temporary victory over what had happened. When you fight these kinds of battles, but in the long run--technically at least--lose, is the battle worth waging in the first place? And how do you allocate your energy in the kinds of things you want to do?

Robinson: I guess I judge my own energy by reflecting back on the myth of Sisyphus, where you get your jollies in the struggle to achieve, rather than in victories. There are no final victories. What I do is try to see what I might do next and see if there's anything I did wrong that I might profit by, and go back to rolling the stone up Mount Olympus, I guess.

---

*Note: The Supreme Court refused to review the appeals court decision.

Steen: Some of your comments about Judge Justice suggested that, in effect, you're not surprised that it was overturned. It seemed like he was sort of politically--

Robinson: Yes, I was surprised! I did not believe that that would be overturned.

Steen: Was that right?

Robinson: Yes. I knew the judge did his best to write his decision in such a way that it would not be overturned.

Steen: There was something you'd said earlier about some of his political motivations. He was trying to appeal to the backwoods people of Texas.

Robinson: Oh, yes.

Steen: This element to the man--that I wondered if it might not have been part of the downfall of his decision that he was--

Robinson: No--

Steen: --willing to stretch the legal procedure because of his own personal goal.

Robinson: No, I don't think that's right. I think the downfall was on the part of Ned Fritz, who failed to bring in scientists to support our position. He wanted to play to what he perceived would be sympathies of the judge, rather than to appeal to his reason with good witnesses.

He was trying to save money. That was the main thing there. The Texas Committee on Natural Resources doesn't have much money. It was all they could do to pay my expenses to go out there. And they paid me no fee, of course. They didn't pay anybody any fees for being witnesses.

Steen: We're reading this very brief summary out of context, but some of the language suggests that maybe the overturned decision really was not a

loss for you at all. The ruling added, "We would emphasize that our decision today is not a wholesale license to clearcut in Texas forests. Rather, clearcutting must be used only where it is essential to accomplish relevant forest objectives."

I would assume that the Forest Service would be hard pressed in certain situations to demonstrate that through its EIR process, or whatever it uses in Texas, under the watchdogging of your colleagues there.

Robinson: I don't think so. I think that in their minds they've established that clearcutting is the way to go in all of the forest types in the United States, except for about 5 percent, which they set aside for what they call multiple use purposes--for recreation or for visual qualities around a lot of highways, campgrounds, and recreation areas. They intend to just make tree farms out of the national forests, period.

Steen: The Forest Management Act refers to clearcutting, which can be used when it's the appropriate silvicultural tool. I guess that's certainly the language of this--

Robinson: Oh, yes, that's right. Well, I don't think they understood.

Recently the Sierra Club intervened in a lawsuit in Arkansas, in which the Newton County Wildlife Association is suing the Forest Service to stop them from using herbicides. I got the Newton County Wildlife Society to amend their complaint to get at the reasons that the Forest Service is using herbicides. I was afraid that if we won on that and merely got them to stop using 24D and 245T, then they'd use something else.

The problem that we see is their determination to simplify the ecosystem and grow only that which seems to have the highest commercial value and to ignore the other values of the forest.

Steen: These are herbicides to control brush after clearcutting--or is this to get rid of hardwoods?

Robinson: It's to get rid of hardwoods in favor of pine.

Steen: These are relatively immature forests that they're spraying?

Robinson: Relatively, yes. I don't think that in the Ozarks there is any virgin timber, but a lot of it's fifty, eighty, a hundred years old, but it's almost all hardwood. But there're walnut trees--that big around.

Steen: That's the same argument--or same observation you made in Texas. You described oak two feet through that they were girdling--just to get rid of it.

Robinson: Right. Because they wanted to grow pine. What I'm pointing out here is if we lose the Texas lawsuit we'll try somewhere else--in another way. In fact, we are already doing that in this Arkansas suit.

We're going to go on fighting until they employ the research that comes out of the experiment stations on this subject. That's all there is to it.

Steen: If either side views it as a victory and a validation of their perceptions--I suppose that's a danger. The Forest Service, in effect, is chastized, and is more careful. I don't think anything but good can come of this demonstration that they didn't do their homework.

Even assuming that their silvicultural procedures were the appropriate ones; I know you don't agree. But if they were appropriate, they didn't do a very good job of explaining to anyone what they were doing. Otherwise, they wouldn't have gone through all this.

Robinson: I think that's not right! I think the admonition of the judge in this case and the

language of the Forest Management Act are too broad to have any impact.

Have you seen the regulations that were proposed by the committee of scientists under the Forest Management Act?

Steen: No, I haven't seen that.

Robinson: I have studied them, and I've been called upon to comment. But I can tell you in connection with this that the regulations, as now proposed, would if enacted result in the removal of all the remaining saw-timber size timber in the national forests over the next fifteen to twenty years. This Forest Management Act is ineffective because they twisted it into license to just simply rip off the forests.

SIERRA CLUB ASSIGNMENTS

Harold Steen: One of the things that you said that you wanted to talk about was the Monongahela suit, the Randolph and Humphrey bills, and the Forest Management Act of 1976.

Gordon Robinson: Oh, yes.

Steen: I don't know what your role was in the Monongahela suit. I assume that you testified in favor of the Randolph bill.

Robinson: I helped draft the Randolph bill, and I was the adviser to Helen Needham, who was the attorney in the Monongahela case.

Steen: Let's go back a little bit. I've heard various accounts about the Sierra Club's position on the Monongahela suit, and their fear that it would be developed into an overkill and then lose everything. They didn't want it to be a ban on clearcutting in the United States--they wanted to hold it together while they got their forces going, because what potentially was growing out of that suit was too drastic.

What was the Sierra Club's official role in that lawsuit? Do you know? It was actually Izaak Walton League versus Butz. But where was the Club in that?

Robinson: Plaintiffs in that suit were the Izaak Walton League, the Sierra Club, Natural Resources Defense Council, West Virginia Highlands Conservancy, and Forrest Armentrout.

Actually, that suit grew out of an effort on the part of Jim Moorman, who was executive director of the Sierra Club Legal Defense, to try to stop clearcutting in the national forests.

And he asked me what thoughts I had on how we could do that. When he was first appointed and they set up the Sierra Club Legal Defense, he and I had some long discussions on what we might do.

I think he was already aware of this thing and he wanted to know if I thought attacking them on grounds that clearcutting violated the Organic Act of 1897 would make a good suit. I thought it would and I pointed out to him that I had suggested this to Skip Matthews in Alaska in connection with the suit on the Tongass National Forest, and he'd amended the complaint to include it. But the judge ruled it out up there. You know, the Forest Service has been afraid someone would sue on these grounds as long as I can remember.

I thought that would be the appropriate thing to do. So he got a young attorney--one of the Rockefellers. I don't know his name, but he's in his thirties, and is an attorney in Washington, and is very strong on conservation. He's a friend of Jim Moorman. I guess they knew each other in law school, or something.

So Jim got him to do research on the law, and he came forth with a tremendous, wonderful collection of stuff, looking into every court case that had anything to do with this since this Forest Service was set up, and the legislative history of the Organic Act--the whole thing. There is marvelous stuff in it. I don't know if that was submitted to the court or not, but I guess it was.

Then he looked around to see where we could find a suit. He wanted to have this suit in a place where the national forest was of minimal importance and where the clearcutting was relatively innocuous, in order not to make any bigger waves than necessary but while winning a major point.

I don't know how he got connected with the case in West Virginia, but you know the people there for several years had been complaining

to Congress and to the Forest Service and everything, through Senator Jennings Randolph, about their cutting on the Monongahela.

Steen: It's interesting, Gordon, that at the annual meeting of the American Forestry Association in 1975 in Washington, D.C., Hubert Humphrey was the keynote speaker. He was obviously stumping for his own bill, but he gave a little history on the Monongahela suit--and said that the president of the West Virginia Izaak Walton League was a member of a country club, where he was playing golf. It's in the Monongahela National Forest--and there was a major clearcut in progress--visible--from the golf course. He said that was the origin of this suit.

This commentary of yours adds a whole different dimension to it. I don't know how much Humphrey knew--if he was just playing to the audience, or what--but that was his explanation. How foolish the Forest Service was, in effect, to clearcut next to a country club, where the president of the Izaak Walton League routinely played golf.

Robinson: I think that Mr. Humphrey was just a weather-vane politician. I have very little respect for him. I don't share the admiration that so many people have. I think Senator Humphrey did a good thing--a very good thing--in fighting for the civil rights bill, early in his career. But I think from there on, he coasted and was simply a weather vane. I don't place much credence on what he has to say about anything.

Steen: Were you involved in the suit in any way? Did you testify?

Robinson: No. I wrote affidavits--a couple of them--for the court or for the attorneys who presented it to the court. I guess that's being a witness, I'm not sure, technically, what being a witness is. I asked an attorney once if one is a witness if he submits an affidavit even though there is no actual appearance in court.

Steen: Did you actually go there, or did you write philosophically about clearcutting in hardwood types?

Robinson: It was both. I went there and looked at the forest to see what they were doing.

Steen: Was there a specific unit that this suit was about or was it--

Robinson: Yes.

Steen: --just in the Monongahela National Forest in general?

Robinson: No, it was to challenge, I think, three small timber sales, or three timber sales in the area--I think they amounted to about 2 million board feet. I think the largest one was 2.3 million. They're not very big sales. The clear-cuts themselves are not very large. It seems to me that the largest one was fifteen or twenty acres.

Steen: Is that right?

Robinson: Yes, they were just little things.

Steen: In the mind's eye are visions of what went on in Montana and is going on in West Virginia.

Robinson: Oh, no, it was nothing of the sort. However, following that, you have a tangle of buggy whips, you see, coming from the stumps. I went out with Leon Minckler, who is a Sierra Club member and a forester colleague.

He showed me quite a bit about hardwood forestry, and what the basic principles are--how it differs from conifer forestry. The basic difference which had to be born in mind is that hardwood trees grow toward the light, and the young ones sprout. So, it's important to plan the removal of trees so that you're not leaving stumps of small trees in a place where a lot of sprouts are going to be stimulated by the light.

But when you clearcut, you just get a tremendous thicket of sprouts which grow into poor trees, and they're no good for wildlife. It's just a terrible tangle for a very long time--20, 30, 50 years.

Steen: You won the suit.

Robinson: Yes.

Steen: It looked as though you had almost too hot a deal to handle. What was the reaction within the club? Tactically, what do you do now?

Robinson: The strategy was to lay low like Br'er Rabbit. Don't brag about it, don't talk about it. So I said nothing--did nothing. We hoped to keep it quiet. We also hoped to prevent--or rather discourage--other groups from using that as a precedent for other law suits.

Steen: There was some discussion on whether or not the Forest Service should carry this on through appeals process. It didn't go very far.

Robinson: Right.

Steen: They decided to their best interests not to go any farther than they did.

Robinson: Yes, it was affirmed by the circuit court. And with rather firm language, as I recall.

Steen: Did you have a contingency plan that, had the Forest Service gone to the U.S. Court of Appeals or the Supreme Court--wherever the logical next step would have been--that there would have been a campaign that the Sierra Club would have maintained the active pursuit of this?

Robinson: Oh, yes, I'm sure--the attorneys were the ones who discussed that and I was--

Steen: You weren't involved in that.

Robinson: No, I wasn't involved in that discussion. They kept me informed what they were doing.

It's no secret, but it's simply that I'm not an attorney, so I wouldn't be involved.

Steen: Was there a coalition, then, of conservation groups, ready with resources to keep this thing going if necessary? Or was the Sierra Club really handling this alone? Or was the Izaak Walton League willing to go further with this?

Robinson: That I can't tell you, because that would have to do with financing, and that would be negotiation on the level of the executive director of the Sierra Club Legal Defense, and, while I don't think it would have been a secret, I just never thought to inquire. So I don't know.

Steen: The suit was won, but the judge, in effect, said to the Forest Service and whoever else, "If you don't like it, go to Congress because it's the law that needs to be changed. We just interpreted the law." Inviting, in effect, the Forest Management Act of 1976. So then what happened?

Robinson: Then, Jennings Randolph asked Jim Moorman to draft a bill for him, because we heard that Humphrey--I guess before that, a couple of other things happened. Well, I guess these all happened about the same time, and I can't tell you just what the precise sequence was.

I'll stick with what I started to say there. So Moorman asked me to outline what I thought would be an ideal forestry bill. I told him I thought the ideal was to stick with the law we have. The only law that I can see that we might use would be authority of Congress to sell trees that are cut in thinning operations--trees that are immature--in stand-improvement work.

Under the Organic Act they could give away those trees but couldn't sell them. Of course, there was no market in 1897 for the stuff cut in thinning operations, so there wasn't a problem.

All they needed was authority to sell it, [laughs] but for many years in appraising timber--anyhow, they have simply appraised the trees of different species and different quality sizes and got the total amount, and then allocated that amount in order to have a positive price for each element in the sale.

So they could sell it, and they did sell it. They really didn't need another law, but if they needed anything at all, it would be authority to sell the material that otherwise is not merchantable.

Well, that was my thought. However, he insisted that we had to have a compromise position where you could go, because he didn't think we'd be able to hold that position of no repeal of the Organic Act in Congress, owing to the amount of steam that the Forest Service and industry had built up.

I thought we ought to have a major campaign to fight for the Organic Act. So did Mike Frome. So did a number of people. Actually, I think what happened in terms of strategy is that Brock Evans was more interested in getting wilderness than he was in management of the national forests.

You know, he and I and Mike McCloskey had debated on this many times. I had thought that our ideal policy should be to get all the wilderness we can; get as much of the remaining virgin timber as possible in wilderness--to withdraw all of the non-commercial forest lands from exploitation. There's a lot of commercial timber standing on non-commercial forest land. It's not all suitable for wilderness classifications.

On the remaining commercial forest land in the national forest, insist upon multiple-use forestry as had been practiced for the first 50, 60 years by the Forest Service--under the Organic Act. Then fight for regulatory measures to bring about at least a decent level of

sustained yield management on the private forest lands, because the cause of all this clamor for wilderness and the clamor for clearcutting is the failure to manage this 80 percent of the forest lands that are private.

I think each time I went through this, they agreed with me. But you know, the timber industry and the Forest Service have for a long time been trying to get the conservationists to buy a trade-off, whereby if we would withdraw our objection to intensive management of some 50 million acres--the most productive portion of the commercial forest land in the national forest--they would in turn withdraw their objections to expanded wilderness in the higher elevation.

I think that Brock Evans bought that trade-off. He didn't turn a hand to fight the Resource Planning Act or the Forest Management Act.

It was in view of that strategy that Moorman wanted a bill for Jennings Randolph. I helped him design it, but with the idea that this would be a compromise measure to be thrown in only as a last resort. So we put that bill together. And then there was a committee of people who met in Washington, and I was one of them.

Actually, Moorman kept me out of that. First he said he wanted me to go with him and help him draft this bill. Then he kept me out of it. I think he felt either that I was an extremist, or he wanted to do some compromising that he knew I wouldn't go for. Anyhow, they got this bill together, and I was not too happy with it.

Steen: Tell me again who Jim Moorman is officially.

Robinson: He is now assistant attorney general for the United States in charge of land.

Steen: He was under a retainer by the club?

Robinson: No, he was executive director of the Sierra Club Legal Defense, which is a parallel organization set up by the club to handle our legal matters.

Steen: I know when the Sierra Club membership renewals come, you can check a box for the Legal Defense, or the Sierra Club Foundation, or whatever. So that's where he fit into the hierarchy.

Robinson: Right.

Steen: And he reported to McCloskey? Who would work with--

Robinson: Independent, actually. They have their own board of directors, just as the Sierra Club Foundation has--and I don't even know who they are.

But certainly the club is involved in it. It's for the purpose of carrying out the objectives of the club, but legally, they have to have their own board of directors. He technically does not report to the club--he reports to this board of directors--then the board of directors coordinates their efforts with the club.

Steen: All right. There's the Randolph Bill--and you participated in drafting that--and then there's a whole series of other bills, including the Humphrey Bill, which in effect was an amendment to the Resources Planning Act.

Robinson: Right.

Steen: What is your feeling about RPA? Was that the right way to go?

Robinson: No! The Resource Planning Act was an effort to get what the industry failed to get in the Timber Supply Bill.

Steen: Let's go back to the basic principles of RPA.

Robinson: But they were afraid that if they put in the stuff about forestry that is now in the

Forest Management Act in the Resource Planning Act initially, that the conservationists would defeat it in Congress and they couldn't have passed it--that was Humphrey's idea--so they put it through in two parts.

Steen: But the need for long-term planning--obviously you would agree with that.

Robinson: I agree with long-term planning, of course! But I don't agree with planning on the assumption that we're going to make short rotation tree farms out of all the commercial forest land in the National Forests!--and ignore industry and simply trust the free enterprise system to take care of the 80 percent of the forest land that's in private ownership. That won't work. It hasn't worked anywhere in the world.

Steen: I think this is relevant to RPA. The Forest Service has complained over the years that they have gone to Congress, and asked for appropriations to do tasks one, two, and three. Congress gives them 90 percent of what they ask for for timber, 40 percent of what they ask for for recreation. It's a fluctuating kind of support from Congress, and part of the rationale behind RPA was to have Congress accept a long-term commitment.

The Forest Service comes to them with a proposal, and the Congress examines the proposal for the long term; then the Congress is accepting a commitment so the Forest Service then can make better plans.

But your feeling is that there is a basic loophole in the whole thing.

Robinson: That's correct. What you say is the way it was presented and is the purpose. However, what the timber industry was constantly doing was trying to get appropriations that would finance planting, thinning--well, all of the intensive forestry measures which are used

technically to justify increases in the present allowable cut. They're looking for the hasty liquidation of the present old-growth timber in the national forests to compensate for the fact that the private forest land has been depleted.

Steen: Congress has appropriated substantially less than a hundred percent of the RPA authorizations for reforestation and so forth. It's more than last year, but, as I understand the whole process, Congress is not living up to, in effect, its promise that if the Forest Service would come to it with this long-term projection, Congress would review it and adopt it, and then the Forest Service could count on appropriations.

Robinson: Of course, part of our lobbying is to prevent them from implementing this intensive forestry until there is a commitment to manage the forest for multiple use. [Laughs] We want to support them and we will support them if they will manage the forests according to the multiple use law. But they've made up their minds they're not going to do it! That's what the battle's about, you see?

Steen: Okay. I want to talk about the Forest Management Act, but I guess we should go back and talk briefly about the National Timber Supply Act--they're all tied together.

Robinson: Yes, they are. What happened was that in 1968, before the election, the timber industry persuaded several committees of Congress to cooperate in conducting hearings on cost of lumber and housing. [See Appendix D] I called McCloskey's and Brock Evans' attention to this, with the idea that that's where we've got to fight them--also Phil Berry, who's interested in forestry.

Steen: Was Brock in Washington in 1968?

Robinson: At that time, he was our representative in the Pacific Northwest, but he was the most effective of our field representatives--and most concerned with timber because the Pacific

Northwest was where most of the timber is.

At first they were skeptical; they didn't think that was our battle. Brock agreed with me, and we persuaded Mike and we persuaded other members of the board that we really should attend those hearings and make a presentation. We got representatives of a variety of conservation organizations in Washington to work with us. They were the Trout Unlimited, Audubon Society, Wilderness Society--oh, there must have been some others. This is before Friends of the Earth was organized.

Lloyd Tupling was our Washington representative at that time. We gathered at his house at St. Michaels on Chesapeake Bay over a weekend, and I explained what I foresaw coming out of this Timber Supply Act, as the thing was written. I had written something for these people to read on the subject in advance.

I pointed out, though, that what the industry was essentially trying to do was to get the receipts from the sale of timber put into a revolving fund to be used for accelerating the sale of old-growth timber out of the national forests. And it applied to all the commercial forest land. It was an effort to justify hasily liquidating the old-growth timber throughout the national forest system.

Steen: The Forest Service has always been very proud that it generates income to the treasury.

Robinson: Yes.

Steen: This seems to me act 12 of the same play, where the Forest Service wanted to show the people that it wasn't like a lot of other government agencies that just took from the people. They brought back money into the treasury. This idea of generating money from timber sales to support forest management has always been very appealing to the Forest Service.

Robinson: I know.

Steen: That's probably part of the Timber Supply Act.

Robinson: Oh, yes, right! We objected to it on the grounds that it would be like financing them, and have the same pitfalls that result from financing the freeway builders out of the gasoline tax--that they'd just go on building their bureaucracy and cutting more and more timber in order to get more money in order to build their bureaucracy. They'd lose track of their objectives.

We thought there should be more public control over the management of the national forests than we would have under those circumstances. And Congress agreed with us. And that's why it was defeated.

Steen: It was killed in committee? What actually happened?

Robinson: We went to Washington, and had this gathering, you know, and we developed our arguments about it. I think one of the principle arguments we used in talking to Congressmen was that the Forest Service was so adamantly determined to sell all the timber of the national forest, in several cases we've had to sue them!

For example, they put up a timber sale within the Gore Range Primitive Area in Colorado, and the local conservationists objected. They objected years before the sale came up. They saw it on the long-range sale program.

The Forest Service people just came back and said, "Well, we're going to remove that from the primitive area, when it's classified for Wilderness." And they had to argue with them that it's Congress that's going to decide the wilderness; not you! They didn't agree.

They did change the boundaries of the area to coincide with the boundary of the primitive area, but they left the East Meadowcreek sale in there. They went right ahead and made the

sale! So we filed suit. We won. I was a witness in that suit. Judge Doyle said at the close of the trial, "I understand your concerns. I realize that you've invested money in this timber and that you're relying on this for operating your mill. I understand these things. But if you're permitted to go ahead and cut that timber, the opportunity for Congress to consider this area for wilderness is foreclosed! I'll give you my decision as soon as I can." It was just marvelous.

But the arrogance of the Forest Service was just absurd! I remember they had the regional forester on the witness stand during that trial. Tony Ruckel was our attorney and he and the judge got the guy in a cross-fire. They took turns asking him questions and they were leading up to the circumstances under which he would recommend that an area be withheld from timber sale.

Under the wilderness law, there's a provision that the president can add up to twelve hundred acres of contiguous land in a compact unit to the proposal. So, at one point, the judge asked the regional forester, if he would withhold a timber sale in an area that the president asked to have deleted.

Nordwall looked around and said, "Well, I suppose that all depends on where it is!" And the judge just flushed and he looked at the guy and he wrote notes.

Steen: This kind of victory showed people in Congress--the committees--that there was a real opposition to what the Timber Supply Act stood for.

Robinson: Yes! We had to explain this kind of thing to congressmen to get them to realize that the Forest Service had lost their way. They're absolutely arrogant about what they're going to do and they were ignoring the other laws and even the meanings of the laws. So that was the way we went.

Steen: What happened to the Timber Supply Act?

Robinson: The industry had been lobbying for that act for a long time.

Steen: I remember a speech by Spiro Agnew, supporting clearcutting. I thought it was incredible that the vice-president of the United States--out talking to somebody--would refer to clearcutting as an acceptable silvicultural practice with shade-intolerant species. Obviously somebody had written those words, and he was reading them.

Robinson: Oh, yes. The timber industry's lobbying effort was thorough and complete--they had the State Department and the Department of Commerce and it seems to me, everybody on the Cabinet level was involved in promoting this thing.

The State Department, in order to appease the Japanese by having exports of logs. They wanted to increase the amount of timber available so that wouldn't be a drain on the economy. They thought they had everybody lined up, and they thought this thing was a go.

We had our meeting in Washington on a weekend, and the bill was to come up for a vote on Tuesday. That gave us just one day--

Steen: In committee--not on the floor--or was it?

Robinson: No, it was to be a floor vote. The committee had voted it out and they thought it was going to succeed. It was in the Rules Committee, and they were going to vote it out.

Who's that Congressman from Ohio--his name begins with D--he's a forester. Dingle. John Dingle. He helped us. He gave us a room in the House Office Building--the headquarters for our lobbying effort. Brock Evans was directing it all, and he had a big chart on the wall. He had the names of all the congressmen and the rooms they were in--in columns--who was to call on them and what result they got.

There were perhaps a dozen of us, from these various organizations, working on this thing. We went around and talked to all of the key people. We tried to meet with all of them.

Whenever somebody wanted to really get serious about it, and talk about the details of what was involved in the thing, they'd send for me. So I'd go around and talk to the legislative assistants. You realize that you rarely get to talk to a congressman. He'll be pretty pleasant and he'll assure you that he'll follow the recommendations of his L.A. having to do with the subject; then he'll introduce you to this guy, and then you talk to him.

It turns out that there are a few congressmen who are particularly interested in this subject, and everybody knows it. So when it comes to a vote, they ask this guy, "What's your recommendation?" I guess we talked to most of those--one is Hamilton Fish, who is very much interested in conservation.

It seemed that some congressman died and so they decided to--in memory of this guy--to have no session on Tuesday, so we met Wednesday instead. That gave us another day to do our work--so we had two days instead of one, as we thought. Good thing we did. That's the way it went. So then we all went into the balcony of the House to see the action on the floor.

We were sitting in the balcony, and these people all came in. It seems there is something they call a cloak tally--I'm not sure that's the right word--there's some guy at each door and he asks each congressman as he comes in how he's going to vote on the issue. Then they put all this together and they give this to the leader.

He discovered that the majority was <u>opposed</u> to the bill. This was a shock--they thought they had it in the bag. We could see that Carl Albert was called down from the podium, and

somebody handed him a piece of paper and they went buzz, buzz, buzz. They went out of the room with it and came back, and then everybody started going out. What the hell happened?

Steen: They withdrew the bill, in effect, rather than take it to a vote.

Robinson: They withdrew the bill! Because they saw they couldn't win. Then we all went home.

Steen: Who was handling the strategy for the bill?

Robinson: I think it was Saylor. John Saylor.

Steen: This was about 1969 or 1970--

Robinson: This was '69. The bill was called up again two weeks later. At that time they voted on it and the vote was overwhelmingly in favor of rejection. The Timber Supply Bill was defeated.

It was kind of interesting. In that two-week period I put together a brochure showing what this allowable cut effect amounts to, with photographs. I had I guess a thousand of them printed and got them done just in time to tie a string on them and haul them down to the airport and fly them to Washington for this second vote on the bill.*

Again, we had only a day or so to prepare. We were in that room again that Dingle gave us, wondering how we were going to distribute these things, because to visit 500 offices is quite a chore.

Just at that time, some young man from one of the universities in the East stuck his head in the door and said, "John Dingle sent us up here. I have a group of law students who want to know something about how Congress works.

---

*This Is What We Stand to Lose, San Francisco: Sierra Club, 1970. 4 pp.

Have you got a job we could do?" We said, "Do you suppose you could distribute these things?" [Laughs] The guy says, "Sure, we can do that." They planned a strategy to distribute those things, and by noon, every congressman had one in his fist. [Claps hands together and laughs] That was just marvelous.

Steen: It's these little acts of history that make things work.

Robinson: Right. I don't know that that changed the vote, but it was delightful to have that happen. It was so nice.

Steen: Let's go back. There was a bunch of bills that led to the Forest Management Act--the Randolph Bill and the Humphrey Bill, and so forth. What sort of to-ing and fro-ing and negotiating went on there? Did you really feel that the Randolph Bill had any chance, or was that just a stalking horse?

Robinson: I thought it should have a chance, but Randolph introduced it at the beginning of the debate instead of trying to hang on to the Organic Act. That shocked me.

Steen: You felt it should be used as a compromise.

Robinson: That's right! I helped draft it with the understanding that it was a compromise to be used only in the event there's no other way to go. But they started in with it, so that in turn was compromised, and so the Forest Management Act was enacted and that was the defeat.

I think the Forest Management Act did for conservation policy what the Tonkin Gulf Resolution did for foreign policy.

Steen: That's a very strong statement.

Robinson: Yes--but Congress simply abdicated their responsibility with regard to the forest lands to the administration. That's what that bill does.

Steen: We've lived with the law for a couple of years now, and obviously it's being implemented a piece at a time. Some things won't be implemented for quite awhile yet. Luke Popovich had an essay in the Journal of Forestry about the committee of scientists. There are no conclusions, just the process and the debates within the group, and how they interacted with the Forest Service and others.

Robinson: They have not done their job. [See Appendix E] They were supposed, under the Forest Management Act, to advise the Forest Service on scientific and technical matters to be sure that there is an effective inter-disciplinary approach to responding to a long list of concerns about environmental matters--soil erosion, and maintaining the diversity of species, and protecting endangered species and wildlife, and the whole gamut of things that concern us. They didn't do any of that at all!

All they did was to paraphrase the law with respect to the kinds of things that the Forest Service is to be concerned with. Then they described how allowable cuts are to be determined, and they did it in such a way that the allowable cut will be the absolute maximum that can be justified under the very minimum standards of the sustained yield.

The way they've drawn it up, they say that the allowable cut must be determined on the basis of the utilization standards forty years hence. That means cubic feet of the total tree, doesn't it?

Steen: Yes.

Robinson: All right. If you determine the point of diminishing returns or the culmination of mean annual increment, for any species, using total volume of trees one inch in diameter and over, you get rotations in the neighborhood of 25 to 40 years. It's 40 years typically in Douglas fir and 25 in the southern pine and

about 40 for ponderosa pine of an average size, and so on.

Now, the way you determine an allowable cut is to take the total volume of timber you have, divided by the rotation, and that gives you your cut. It's then modified to reflect growth and factors that would influence it, but all the factors are relatively minor compared to that. It's the total volume divided by the rotation, so the shorter the rotation, the more rapidly you can rip off the forest.

Then they describe departures from sustained yield that are authorized, and it says that they must consider and formulate plans for departing from the sustained yield whenever sticking with the sustained yield would work a hardship on the economy of the local community.

We all know that throughout the western states, mills are running out of timber because they're cutting all they've got. They can put up the argument that they're in a hardship now and so are justified in cutting more rapidly than the sustained yield, in order to compensate for the failure--for the fact that there isn't sufficient private timber.

The argument they put up back in '68--during the hearings on lumber prices--was that we should increase the rate of sale of timber on the national forests in order to keep the industry going at its present level, or to meet the demand, while the trees on the private lands grow up to sufficient size to be merchantable.

Steen: A concept of sustained yield in effect, using private and public lands alternatively.

Robinson: Yes, but with no obligation on the part of the private land owners to practice forestry! It's a one-sided bargain. The government agrees to fill the gap with publicly owned timber on the theory that the profit motive is sufficient to get these guys to do likewise on their own land. But all they're doing is selling the stuff off to sub-divisions!

Steen: If there were some legislative requirement that private industry practice forestry in certain ways, would you have supported this concept of filling this gap with public timber to maintain industry?

Robinson: No, I wouldn't.

Steen: This concept, I believe, is being proposed for western Oregon.

Robinson: I think that the owner must be required, because it takes longer to grow trees than people can wait for a return on investment. That is, if your objective is to maximize income, which, when you have corporate enterprise, that is the objective.

That's basically what's wrong with the economy of our nation today. Everybody's trying to maximize income instead of being satisfied with a modest income and being concerned with the welfare of the country and their neighbor.

So long as that's the way corporate enterprise is structured, then there is no bargain. As they develop a technology or develop a way of making more money from the land than they can by growing timber, that's what they'll do!

Steen: There was another law that went through almost without comment in 1976, the so-called BLM Organic Act. Are you familiar with that?

Robinson: Yes, I am. I think that was a disaster, and I thought we should be fighting it, and they didn't do it.

Steen: There wasn't much information, pro or con. I don't know why.

Robinson: I was aware of it, but I couldn't get our representatives--

Steen: It strikes me as a hodge-podge of things. The definition of multiple use in that law

is much more comprehensive and complex than it is in the Forest Service version. For whatever reason.

I don't know who supported that idea of greater legislative attention to the specifics of multiple use rather than a philosophy that the Forest Service has.

Robinson: I've forgotten just what it said, but I know the objective of the lobbyists on the part of the timber industry was to make sure that the definition of multiple use was not ambiguous--that it could not be interpreted as I interpret the definition in the Multiple Use-Sustained Yield Law to mean integrated multiple uses.

You see, the Public Land Law Review Commission came out with their report--One Third of the Nation's Land, in which they stated that there should be legislation--there should be an act of Congress--interpreting multiple use to mean zoning and dominant use by zone as they interpret it, in order to avoid the kind of thing I tried to bring about through our Texas suit.

But that still isn't resolved! They haven't got that law. They tried to get it through the Organic Act of BLM, yes.

Also, there's a proposal to do the same thing with regard to the lands in the wildlife refuges. That's why we're fighting them in Florida on that one.

Steen: The last time we talked--and this was six months ago--you had been down on those refuges, and they were clearcutting?

Robinson: Yes! They made tree farms out of the forest lands in the wildlife refuges.

Steen: I was asking if you had any knowledge at the time that the authorization that the Wildlife Service was using to do this. Was this habitat improvement?

Robinson: They had no authorization. It's just an administrative decision on their part. What they have done is to justify all the things they want to do in terms of habitat requirements for some wildlife on each refuge. Their program is identical with the program in the national forest, but the language they use to describe it and justify it is in--

Steen: It's strictly an administrative ruling?

Robinson: It's similar to what the Forest Service does, but it's just they talk more about wildlife because it's a wildlife refuge. It amounts to exactly the same thing as in the national forest.

This again is implementing what was proposed by Aspinal's committee in the Public Land Law Review Commission. They want to gather all of the publicly owned forest lands and make them into tree farms.

Steen: Is there more that you want to say about the Forest Management Act?

Robinson: Oh! There is something more about the Forest Management Act, I'd like to say. You know, that act is ambiguous, again, as to the meaning of multiple use. I think we have very good grounds to force the Forest Service to return to multiple use under that law.

It states, I believe six times, with respect to various aspects of management in the national forest, that it has to be done within the constraints of the Multiple Use - Sustained Yield Law. Owing to the fact that the Public Land Law Review Commission recommended that Congress enact a law defining multiple use to mean zoning and dominant use instead of as they interpret it, it means that without that legislation, it doesn't mean that. Therefore, it means what we think it means.

It also means what Congress meant when they passed the Organic Act of 1897. It means what

the Forest Service said it meant for fifty years--that they were managing the forest under that act! I think we still have a chance of reversing that.

Steen: It's interesting. I guess that the battle keeps going on and the tide of victory ebbs and flows for whatever side you're on.

Robinson: But meantime the timber's being ripped off! That's the thing, you see. Part of the strategy of the timber industry is to just keep the ball rolling, because as long as this thing isn't finally settled--as long as the Forest Service continues to sell more timber than can be sustained, why, that's really all they care about.

Steen: The Redwood Park, I guess, was a defeat for the forest industries. It's such a complex, long-term issue that I don't know how we should discuss it, so why don't you start with your involvement in it?

Robinson: All right. When I went to work for the club in 1966, Bob Golden asked me if I wanted to work for Ed Wayburn or for Dave Brower. He told me, incidentally, that Brower had said I was the only forester he would trust. I was astonished, because I had never met Brower. I don't know how he ever heard of me.

Anyhow, that was a factor. I had never heard of Ed Wayburn. I didn't know who he was. They said, well, he's the president of the club--or he's a board member--and he's the chairman of the Redwoods Task Force, and he's trying to get a redwood park. So I thought, "I guess I'd better work with Wayburn because getting the redwood park will employ the skills that I'm sharp on right now, having worked with the S.P. all these years.

So we met Ed Wayburn, and the first thing they wanted me to determine was whether the timber industry was practicing sustained yield like they said, and if the park would destroy

their sustained yield plans, or whether they're just cutting with the idea of going out of business--the way the industry's always done in the past.

I went to Eureka. It turned out that a friend of mine by the name of Guy Konnersman was the forester for the assessor. He co-operated with me to the extent that he could without violating confidences. But you see, I had represented the Southern Pacific Company and had gone with our tax representative to meet the county assessors each year in some thirteen counties that the S.P. Land Company owns timberland in.

So I knew what the assessment process is and how it works. I was able to work back from the assessed value of the land owned by these companies, and with some of the information that Guy Konnersman gave me as to the values that they used, which is public information, I could readily determine what volume of timber the assessor thought was on those lands.

And the assessor based his assessment on a county cruise. It was done by Hammon, Jensen, and Wallen just a few years before. I remembered that there was some controversy about the cruise. The timber industry thought that if they're going to get a full accurate cruise, they ought to get a change in the tax law.

I found that they had like twelve years to go and twenty years to go, and things like that. They're not practicing sustained yield. [Laughs] I estimated how many years they had to go with the park as proposed, and how many years to go without it, and what volume of timber they had, and put this together in a report.

Mike McCloskey took it to Washington. He'd simply attached the statement that I wrote [See Appendix F] to the presentation that he made for the committee--the Interior Committee hearing--on the redwood park.

At the time, I was with Ed Z'burg's committee on a tour concerning forest practices in Northern California. A lot of people had been complaining about the failure of the Forest Practice Act to protect forest lands, and he wanted to know what this was all about, so we stopped at Benbow Inn, and we had a meeting there.

It was interesting. Paul Zinke was defending the timber industry's clearcutting on the grounds that it was not causing this soil erosion and was not going to reduce [laughs] the growing capacity of the land. God Almighty! Those people are terrible.

Steen: He's a professor at Berkeley?

Robinson: Professor of forest influences. The next morning, I came down to the lobby of the hotel for breakfast, and here was Gene Hofsted, red as a beet and ready to tear me all apart, limb by limb [laughs]--he had just flown back from Washington, where he'd heard Mike McCloskey present this testimony that I'd gathered--

Steen: Who's Gene Hofsted?

Robinson: He's forester for Arcata National. He accused me of getting secret information--confidential information--from the assessor, and he was going to have me kicked out of the Society of American Foresters for unethical conduct.

All I could say was, "Gee, I must have come pretty close!" [Laughs] Well, that's the way it went.

Steen: I remember that episode about the SAF. I don't know how far it got, but there was some discussion that you were violating the SAF code of conduct.

Robinson: It was because they thought I had stolen this information and I didn't. It was simply worked back from the assessor's record. [Laughs]

As far as ethics is concerned, my wife thinks that--and I think that she's quite right--professional ethics means you scratch my back and I'll scratch yours; my profession right or wrong.

In addition to that, I showed that the volume of timber in the proposed park was equal to the amount of timber cut in Humboldt and Del Norte counties in about two years. So that if they are practicing sustained yield, as they say they are in the county--then the loss of this timber would be no more than the error of estimate of the quantity that could be cut under sustained yield. [See Appendix K]

If you have a hundred-year rotation and you lose a two-year supply, you can't even come that close in estimating how much you've got. So I thought it was inconsequential in terms of its impact on the economy. That's still true.

I also pointed out that the timber industry had only about fifteen years to go in Humboldt County before they're reduced to the sustained yield capacity of the national forests plus whatever pulp they can get out of the young second-growth stands.

Steen: Did they specifically challenge these estimates of yours?

Robinson: No, they never did. The only challenge to those figures was that I had confused Korbel with Klamath; I said something about Simpson's Mill at Korbel--actually it was the one at Klamath. So they made a big fuss over that--how careless I was and misleading the public. [Laughs] That's the only fault they found in it.

No, I have never been challenged directly on anything that I have done for the Club, except that one point, that I can recall. That makes me think I've been too conservative.

Steen: Were you involved at all at the apparent conflict--at least in strategy--between Save the Redwoods League and the Sierra Club?

Robinson: Yes! Yes.

Steen: Which I guess was a little bitter at times.

Robinson: Yes.

Steen: They have sort of kissed and made up now, but--

Robinson: What happened--you know, in 1964, the National Geographic Society gave $50,000 to the Department of the Interior to conduct a study for determining where we might locate a redwood national park.

One of the purposes of the Save the Redwoods League when it was founded, back in 1917, was to promote a redwood national park, and they never did anything about it. They formed a detente with the timber industry, whereby the industry would set aside certain lands that the Park Service wanted for the state parks, and strips along the highways. They agreed to withhold it from sale until such time as it would be mutually convenient to sell it.

The Save the Redwoods League lobbied the state to get matching funds, and that sort of thing. So that's how they were rounding out the parks.

The thing is that nothing had been done about a redwood national park, and time was running out, so they wanted this study. I don't know who promoted that, but that's where they went. So they came out with a brochure recommending a redwood national park in Redwood Creek, plus the stuff in Mill Creek in Del Norte County.

There was a bunch of land around there in Mill Creek, which would be a logical extension of the Jedediah Smith State Park. The idea was to appropriate money to purchase that land as an addition to Jedediah Smith State Park, which would remain under state jurisdiction.

But Prairie Creek State Park would become part of the redwood national park. The timber

industry flew into a rage at the announcement of this proposal, and it appears that they caucused and decided to throw their little brother to the wolves because, you see, the Redwood Creek area was owned by three national corporations--Simpson Timber Company, Georgia Pacific, which is now Louisiana Pacific, and Arcata National, which is a Weyerhaueser interest. It isn't part of the Weyerhaueser Company, but the chairman of the board of directors is C. Davis Weyerhaueser, who's of the family.

But the owners of the private land in Del Norte County was Miller-Rellim, a relatively small local outfit. So they decided to throw him to the wolves, you see. They talked Newton Drury into supporting the redwood national park in Mill Creek, and dropping the Redwood Creek area.

Ed Wayburn was furious about this! He thought that we should support the Park Service's recommendation. The board of directors of the Sierra Club agreed with him, and we went to bat for the Park Service. Meanwhile, a few members--I guess Dick Leonard, who was also a member of the board of directors of Save the Redwoods League, broke with us on that, and he insisted that was an error.

There was no open rebellion by anybody--he was loyal to the club but he thought that we should support Newton Drury. But we didn't do it simply because we thought that Newton Drury had been sucked in by the timber industry and was making a mistake. While we regretted it and had great respect for him--still do--we just thought the greater park was important.

I said "we"--I was more or less impartial in the thing, personally.

Steen: Were you involved in the basic strategies or only as a forestry consultant on sustained yield?

Robinson: I was just a forestry consultant.

Steen: But you must have sat in on some of the sessions.

Robinson: Oh, yes, sure. I certainly supported the proposal. I wanted both for parks. I couldn't see why we couldn't do both--and I think we could have if it hadn't been for the Vietnam War and Johnson, who tried to have guns and butter at the same time. He began trying to reduce the federal expenditures to a bare minimum.

Steen: Were there other conservation problem areas that were neglected because the Sierra Club was focusing on redwood park? We've talked about this before--how the Sierra Club determined its target problem and how you're assigned.

Obviously a lot of energy went into the park battle, at the expense of other things that would have ordinarily received attention, had you not been working on the redwoods.

Robinson: Part of the Sierra Club's strategy is to put a high priority on issues that have wide popular appeal, in order to attract members and to strengthen the club for taking care of these other projects.

Let me come back to what might have been neglected. You see, most of the work of the club is done by the groups and the chapters and the volunteers. We at the headquarters only do those things which the local people are unable to do for themselves.

We don't even know what they're all doing. There are just too many things going on. No one person knows all the projects that the club is working on. We just coordinate as to policy and purpose and then it's every man for himself.

We fight like the Indians did during the Revolution, I guess. Much to the consternation of our opponents. They're never going to find out who to talk to. [Laughter]

Steen: I don't know if the redwood park controversy is in two pieces: the original park and the recent additions. Is it all one struggle?

Robinson: I think it's all one struggle. Ed Wayburn has been the principal strategist in this thing. He's really been magnificent. He has more to his credit than any living conservationist, I think, in terms of areas preserved.

I would have dropped it myself. I didn't think that expanding the park would be worth the struggle. But they got me involved, and I went up and looked at it and found that there was more there than I thought there was. I thought they'd cut most of it, from flying over it, you know.

Well, they had just completely wiped out that whole east slope of redwood trees that belonged to Arcata National--there's hardly anything left. That, to me, was the important thing to try to get in the park, because that was an example of the transition from the open grasslands and prairies through Douglas fir and occasional redwood, down to redwood forest.

Steen: There was quite a controversy over the widening of Highway 101 in the early sixties. I was in Seattle at the time; I'd never seen the redwoods and I couldn't understand what the problem was. I didn't realize how rugged the terrain was--a full bench cut for a four lane highway is a big cut.

Robinson: That cut that they made in Humboldt Redwood State Park, I understand, is the highest highway cut in the world; 800 feet or something like that? Absolute trench right in the middle of that park! That pissed off the Rockefellers to where they put out plenty for this conservation battle.

As a matter of fact, it was that and the fact that the Save the Redwoods League didn't have money enough to acquire Cuneo Creek and all that. The timber industry logged that in

spite of the protest of Save the Redwoods League, and this led to a flood that wiped out something like 20 percent of the trees that the Rockefellers had bought and donated to that park. That's why that young Rockefeller worked so hard on that lawsuit in West Virginia. He puts up a lot of money for conservation for that reason.

I'm not supposed to make this sort of thing public, I guess, but [laughs]--

Steen: You can pull any of that out that you feel shouldn't be released, when you go over the transcript.

Robinson: I'm of the opinion that there shouldn't be secrets.

Steen: I agree. Some people are awfully nervous. I suppose if you have a lot of money or whatever, you worry about being sued. Ordinary folks don't worry about that because try your darnedest, you're not going to get very much. We, in our oral history program, run into a lot of sensitivity.

Robinson: I know you do. You told me that before--but I don't believe in secrets.

Steen: Getting back to the park, is there any philosophical substance to the anti-park argument about property rights? They bought the land--they went through some legal process and they pay taxes on it. They have to involuntarily give it up, even though they're being compensated for it--apparently at fair market value.

Is there some philosophical objection to what happened in the taking of the land, to use the rhetoric of the anti-park forces--and where do you draw the line in a democracy in this whole issue? Are the redwoods themselves important enough to establish a precedent--taking land for recreation--or was it a precedent?

Robinson: I don't think it was a precedent and I

don't think there's anything wrong with it. I think philosophically the error was made long ago, when we carried the free enterprise system altogether too far.

I don't believe people should have the right to do whatever they please with their land. I don't believe people have the right to destroy land the way that they do in the logging up there. I don't think anyone should be permitted to do that.

I don't understand how it is people can take money from the state to get an education in forestry and then make a career of destroying the very forest land that they've been taught how to manage. I'm incensed at the whole profession.

Steen: Almost all of the national parks have been reserved from public lands.

Robinson: Until with the Pt. Reyes National Seashore and the Redwood Park.

Steen: Right--this was one of the arguments that was advanced: that this is a very dangerous precedent. But you obviously don't accept this.

Robinson: I don't accept that, no. Philosophically, I think that in a democracy we have the right to change the rules, and--

Steen: Can we make an analogy that we Americans would be incensed if the Egyptians were to grind up the pyramids for chicken grit or something, saying that they owned the pyramids. We would say they belong to all of mankind. Are the redwoods analogous in that sense--

Robinson: Indeed they are.

Steen: --that they belong to the world and not to California or the Forest Service or the Park Service, is that--?

Robinson: I agree, yes.

Steen: Because they are so unique that there is that justification to do that.

Robinson: I don't think we even need that justification. I think that's exactly right. I think that's clear.

Steen: That's kind of the feeling I have about the redwoods. I wouldn't favor the same kind of strategy, say, for a stand of lodgepole pine in Montana. To me the redwoods are that unique--there's so few of them left in such a small geographic area.

Anyway, this is your interview; not mine. However, I was just wondering about the arguments that various sides put up--jobs versus recreation and all of the other issues. Which ones are legitimate?

Robinson: The least impressive argument is the private property one. It's been established, I think, throughout our history, that we can acquire private property for public use, providing there's just remuneration.

As a matter of fact, I think that people get paid altogether too much in their just compensation. I thought we ought to sue the Department of Justice or at least intervene in the settlement of the case in the first redwood park bill.

Steen: This was one of the arguments used against expansion--this was the most expensive park in history and had the least use, and so the dollar per user was not justified.

Robinson: I believe there was dishonesty in the settlement of that.

Steen: Are you satisfied now with the basic geometry of the park, or do you think it needs to be enlarged in certain watersheds, and is it worth going after still more? You said you were surprised Wayburn continued on.

Robinson: Yes.

Steen: You wouldn't have, would you? Are there more battles to be fought up there?

Robinson: Yes, there are.

Steen: It's not over then.

Robinson: No, it's not over. [Laughs]

Steen: Do you want to talk about the park? Specifically your role in it? I think there's probably enough documentation eventually to write a full history of the controversy.

Robinson: Oh, yes. You asked me for my comments on some of the other arguments against the park, like jobs. I think that the arguments about that are almost totally false. I think that the timber industry has no concern whatsoever for the long-range employment of their personnel. As soon as they've cut the timber that's left, they'll fire them, and that'll be the end of it. They've always done that.

They put up that argument merely to get as much popular support as they could for opposing the park. But I don't think they really opposed the expansion.

I went to Washington as spokesman for the Sierra Club on the first hearings we had on this bill to expand the park. That was in March last year, I guess. It was a hearing conducted by Phillip Burton. I saw John Miles, who was the forester for the industry.

All these foresters for the timber industry were there making their arguments. They were all so pleased to see me and cordial--you wouldn't believe it! Shake hands all around and happy and stuff. Well, in the past, those people have acted like they hated my guts, and I wondered what the hell was going on. They certainly don't object to this park expansion. They're not emotionally [laughs] objecting to it anyway, or they wouldn't have been so pleasant to me.

I figured right then that we were going to get the park expansion and their opposition is merely bargaining to get as much money as they can. I think that's exactly what happened. I think that when Tip O'Neil withdrew the thing for postponing the vote on the bill last fall til early this year, he was doing that only at the request of the timber industry to give them time to contrive some transactions that would be used for establishing high prices.

Right now, there's another battle shaping up over the values.

Steen: I don't know when the actual price will be determined, but by the press release Arcata National sent out, they got their first $60 million payment. I guess that was to get the ball rolling--but the total amount is still--

Robinson: Oh, they filed suit against--I don't know who they sued--but they filed suit the day after the bill was signed--all three of those companies did--on the grounds that Congress didn't appropriate enough money.

Steen: It's fascinating when experts disagree with experts. For example, the erosion controversy and whether or not logging causes erosion--soil scientists claim it does and soil scientists claim it doesn't.

Robinson: The truth of the matter is clear. [See Appendix G] The soil scientists who were saying it doesn't cause damage were faking it. Those are just paid liars. I know that. If you know Janda--

Steen: No, I don't. I don't know any of the cast of characters.

Robinson: I see. Well, Dick Janda works for the Department of the Interior, the Geological Survey, in Menlo Park. He's been conducting studies up there for the Park Service for a number of years. He's objective and honest, and, as a matter of fact, he's conservative.

He's taken me down personally a number of times for being an extremist in the positions that I've taken. I don't know why--I can't understand it.

He's afraid of losing his job, too. He was a witness in our lawsuit, you know, to try to stop the logging in there. We sued the Park Service for failure to implement that provision that gave them the authority to regulate logging on the private lands. He was a witness for the Park Service.

Our attorneys had talked to him, and he said some very good things privately, but then when he got on the witness stand, he contradicted himself. So that tells you that the man's objective as he knows how to be and is afraid of telling the truth, and still, he totally destroys the evidence that is presented by the people hired by industry. I think that that shows you where the truth is.

Steen: Let's talk about the Forest Practice Act. It's interesting in its own right but is certainly related to the need for a park or no-need for a park. One of the arguments against the park is that most of the good redwoods are already in state parks, and we have the California Forest Practice Act that protects the integrity of the redwood ecosystem. You don't agree with that, I'm sure.

Robinson: Oh, no! Would you like to know my role in the Forest Practice Act? One of the first things I did for the Sierra Club after starting to work with them was to comment on the Forest Practice Act for Ed Z'berg's committee and the hearing they had in Giannini Hall in Berkeley. This must have been about 1967.

I simply said that we've had this Forest Practice Act now for twenty-five years and I think that we can declare it a total failure, and explained my reasons. It was a brief statement. This made the press.

The president of International Paper Company called the president of Southern Pacific Company, Mr. D. J. Russell, and said, "Can't you shut him up?!" [Laughs] And Mr. Russell says, "Well, we couldn't shut him up when he worked for us. What the hell do you expect us to do about it now?!" They had fired me, you know.

Steen: Yes.

Robinson: I'd fought that Forest Practice Act from the time they'd adopted the thing, from the Southern Pacific's point of view. That's nothing new.

Sometime later Z'berg had a field trip. That's the one in which Hofsted accosted me in the Benbow Inn. On that field trip, we went up and looked at some atrocious logging along the coast. John Callaghan was tagging along, trying to convince Z'berg of the adequacy of the present rules in the Forest Practice Act.

We were in a canyon--I've forgotten where it was now, but there was this steep slope. Some guy had gone on with a tractor, used a bulldozer blade, and made horizontal paths about every fifty feet all the way up this thing. Then when it rained, it all came down to the creek. One of the guys--I guess he's the director of the Fish and Game Department--was in there too, and he was pointing to Ed how all this had resulted in silting the stream and destroying the salmon spawning beds.

Ed turns to somebody and says, "Well, why in the hell don't we have rules that would prevent this kind of thing?" And Callaghan says, "We have to have rules that the logger can understand."

Then I said, "Well, then, why don't we have rules that the foresters can understand--and license the foresters and forbid logging except under the supervision of a licensed forester?"

That became the basic policy, I guess, or objective in the new Forest Practice Act. Ed tried to get a new law passed and couldn't get it out of committee--anyhow, it was dropped for several years. Then the Bayside Timber case came up, you know, in San Mateo County.

Steen: Were you involved in that in any way?

Robinson: Yes. I came down and represented the Sierra Club before the county board of supervisors, and I did several things. I've forgotten now just what they all were, but I worked with the attorney on the case, too. The principal person, though, was Leonard Theiss.

Steen: I know. He works with the CDF up at Felton now.

Robinson: Yes. My participation in that was peripheral. Anyhow, when the Forest Practice Act was declared unconstitutional, then of course we needed a new law.

They had hearings and I presented an outline of what I thought the law should be. [See Appendix H] It was an expansion of that idea--licensing foresters--forbidding logging except under the supervision of one who was licensed, and tax reform to make good forestry possible. Then some basic requirements concerning forest practices.

Steen: I remember the earlier drafts. It was very stiff on the licensed forester. If he screws up, he would automatically lose his license.

Robinson: That was the purpose.

Steen: But that got softened.

Robinson: That's right. The timber industry got to Nejedly, who was a Republican and represented real estate people. He was the head of the Resources Committee in the Senate. He took industry's position right down the line.

Ed Z'berg was also strong. He and Charles Warren in the Assembly fought it out, and we lost some important measures in that bill.

Steen: I was disappointed that the SAF didn't fight harder for giving the full responsibility to the professional forester. I can understand why industry would have opposed that. Any corporation, I guess, would oppose having this autonomous profession, as it were, running its show for them, but I thought SAF missed its chance.

Robinson: It did. The reason they did it was that the foresters working for the State Division of Forestry did not want to have the responsibility. For a long time they have seen themselves as cops. They want to have very clear instructions. They want to be able to say this guy's in violation or he's not in violation on the basis of some very measurable objective, so that their judgment is not at stake--so that they themselves are free of responsibility.

I blame them. But this has been their attitude toward rules ever since the Forest Practice Act was adopted in 1945.

Steen: Maybe in a large agency, it has to be that way.

Robinson: No, I don't think it does. I think this is the result of lobbying on the part of the timber industry. I think these people were simply frightened by industry into thinking that they themselves would be in difficulty and their lives would be miserable unless that's the way the rules are.

Steen: I was on a committee here where we drafted a revision to the county ordinance--which is authorized by the state--but which has to be equal to or stronger than the Forest Practice Act. We tried to give the county forester discretion--not just to go out and count stumps and measure a hundred feet from a stream and

so forth. But CDF was always a thorn in our side on this matter of discretion. Their interpretation was that it weakened the law if a forester received discretion. It's discouraging to me just from the standpoint of the philosophy of what a professional's supposed to do.

Robinson: That's right.

Steen: To use your best judgment, based upon some technical skills and information.

Robinson: That's correct. That's correct. I think we still have to work on that. I have said for years that what we need to do is to develop a clear separation of responsibility between the forester and the businessman.

I'm willing to see the businessman make all the money he can from the timber the forester makes available, but I would deny the businessman the right to order the forester around. I think the forester should be free to practice his profession as the medical people are.

You can see what the medical profession would be if the doctors were all employees of hospitals and drug companies. Can't you hear them just say, "Well, sure, I know what good medical practice is, but how the hell do you expect me to do it?" That's exactly what it would be.

What I tried to bring about in my efforts on this Forest Practice Bill was that very thing, and Ed Z'berg saw it and tried to bring it about, but he couldn't do it.

Steen: It's in there, but it's pretty watered down.

Robinson: Yes. But we have a chance yet. You see, I was assured by our attorneys, who were advising us in this process, that if the purpose of the law was clear and was related to public interest in the land, that anything that followed in the bill that's inconsistent with the purpose would lose in court, because what the court looks at

is the purpose rather than the details for accomplishing that purpose.

So I concentrated my effort--my lobbying effort--in getting a clear statement of objectives in the purpose. If you read the purpose, you'll see it's good. That's how we got around or hoped, in the long run, to overcome Nejedly's opposition to our objectives. We may win yet on that.

Nobody's gone to court on it for two reasons: One is as long as the timber industry's still strong in the legislature to overcome it, we don't want to press it.

Steen: You get the same licensing flier from Sacramento that I do, and every now and then, there's three or four foresters lose their license, because they have falsified some document--

Robinson: I hadn't noticed that.

Steen: It's based upon gross negligence, which is still under definition. They are actually rescinding licenses of certain foresters. Some of them are contested and some are not contested.

It's not as strong as was the language in the original bill, but at least the licensing operation is providing some pressure. You make out a timber harvest plan, and the hillside slides into the creek, you might lose your license.

Robinson: That's what we were after, but I didn't know that was happening. Well, that's good.

Steen: Maybe it's enough--I don't know. It's hard to say.

Robinson: That got by me--I didn't know that.

You asked me what was lost by concentrating on the redwood park. I've mentioned one thing. But another thing that was lost was that every damned time there were hot issues in Washington that took my attention, along, at the same time,

came these things that are urgently important in California, and I couldn't be two places at once. I did not devote as much attention to the state legislature as I thought I should. That's what was lost.

But you couldn't do both! I did think that if we could bring about a really strong and adequate Forest Practice Act in California, that it could set an example for the rest of the nation.

Steen: That's a question I was leading up to: How does the Sierra Club justify, as a national organization, concentrating on California? Mineral King, Redwood Park--there are issues in Minnesota, in Florida, and so on and so forth. Is it still predominantly a California-oriented organization because of its membership, and only national on certain issues?

Robinson: No, I wouldn't say that. I think that it's much more national than it used to be--much more.

Steen: And by using the Forest Practice Act as an example for the nation, it can be justified as a national effort, really.

Robinson: Yes, oh, yes. Following those hearings on clearcutting that Senator Church had, which I had a role in, too. [See Appendix I]

Steen: Okay, we can come to that, but let's finish the Forest Practice Act.

Robinson: Well, it fits in with this. I helped in the drafting of that Metcalf Bill, which would have required multiple use forestry, as I see it, on the national forest and on the private lands, too. That never got out of committee, but that was a good bill. It was a bill to regulate forestry throughout the country.

This was our response to the Timber Supply Bill, you see. Somebody--I guess it was Chuck Stoddard, who's now president of the Wilderness

Society and formerly was the director of BLM, he's a friend of mine, suggested that the best strategy for fighting that timber supply bill was to come up with a bill of our own. That was a bill that would have nationally required the states to license foresters and carry out this thing, like I said, in California. That never got out of committee.

When the Forest Practice Act was repealed in California, then what we attempted to do was to implement in California what would have been required under federal law if that bill had passed. That's the substance of it and that's how they relate.

Steen: You're very supportive of the concept of professional foresters. Maybe you don't have much to do with SAF because it doesn't police its membership or whatever, but the forester is definitely a valuable member of our society and has a service to offer.

Robinson: Yes--if they can free themselves from this concept of being employees or servants of the owners--that we must do. Let me say this, though. You know Z'berg reasoned that that whole thing couldn't be in one bill, because it would have to go before three different committees, any one of which could shoot it down. So he carved it into three bills: one was licensing, one was forest practices, and then there was a tax reform bill. So we now have all three.

The Sierra Club supported the licensing bill. As a matter of fact, the Sierra Club and the Society of American Foresters wrote a joint letter in support of that licensing bill and sent it to Reagan to get him to sign it. For once, we did something together. It was Judge Sherwin who was president of the club at the time who brought that about.

Steen: So the Forest Practice Act was enacted, and about this time, Jerry Brown gets elected and appoints that wild woman, Claire Dedrick, as

Resources Secretary. We have all this fuss over EIRs and negative declarations.

Robinson: But she unfortunately didn't know what she was doing.

Steen: All the logging trucks honking their horns in Sacramento.

Robinson: She was a total washout. I'd known Claire for a long time. When she first was elected to the board of directors, she told me that she wanted to have some long talks with me, because she was interested in forestry. That's one of her pet concerns.

I'd been down there to help her with something in connection with a logging hearing in San Mateo County--before she was elected to the board. So I tried to tell her what the basic problems are and explain these things. Every time the subject would get a little complicated, she'd grin and say, "Don't confuse me with facts," and light another cigarette or pour another drink, or something. That's just a favorite comment of hers--"Don't confuse me with facts."

I made many efforts to brief her on the real problems, so that she could effectively serve as a board member on this thing. Well, goddamit, she was appointed Resource Secretary, and she still didn't know. Then when all these things came up, the only people she had around her to advise her were the old guard in the Division of Forestry--and those people support the timber industry right down the line. That's why she failed.

She quickly lost her credibility both with the conservationists and she never had it, to begin with, with industry, because she'd been secretary for the Sierra Club board. At that point, Jerry Brown kicked her upstairs.

Since then, Huey has done better. But hell! He's got Hank Vaux as chairman of the board, for God's sake! Hank doesn't believe in forestry, either.

Steen: I know Hank pretty well. He's an interesting guy.

Robinson: Yes. He's first a Republican! Free enterprise person.

Steen: He is an economist--

Robinson: That's right. Whatever forestry he advocates has to first square with his theories of economics and free enterprise. But forestry is not suited to free enterprise--so this won't work! He doesn't seem to know that--well, he never will know it--but that's the way it is. [Laughs] But that's why we have national forests--because it won't work.

Steen: Now that we have the Act to license foresters, how's it working? I'm going to quote from Gordon Robinson--an article in the Chronicle of January 29, 1978. You're pretty unhappy with the way things are going, and they're pairing you up with Lou Moran. They're quoting from you, quoting from him, back and forth--I don't know if you saw this--it's on the first page of the Chronicle.

Robinson: I've never heard of it.

Steen: [Reading from article] You quote the problem of soil erosion and your concerns--"Robinson, however, is optimistic. [Maybe you didn't know that.] He welcomes the latest state proposals [this is last January] and believes that the new members of the State Forest Board want to promote widespread regeneration. Moreover, Robinson believes that California inevitably will come to value its forests and that in another fifty years they will provide 'sustained yield.'"

Robinson: I don't think I ever said that to anybody.

Steen: Carl Irving--do you know him?

Robinson: Yes.

Steen: Staff writer for the Chronicle.

Robinson: Oh, he came and spent a day with me--he's a good guy.

Steen: He's creating the news story by contrasting you with other points of view. Are you optimistic?

Robinson: No. Oh, optimistic. [Laughs] I start from scratch every time. [Laughs] I don't know what I felt about the time that I had talked with him. I did see this article, and I don't remember that particular part of it. I thought that he did a good job writing it up, and he listened very carefully to what I had to say and understood it. I thought he was okay.

Steen: If we have the toughest Forest Practice Act in the nation--which I understand we do, isn't that pretty good?

Robinson: If that's true, it's a reflection on the rest of the nation, because it does not have a sustained yield requirement. Unless you require sustained yield, all this fiddling around about rules in senseless.

Steen: We debated that quite a bit when we were drafting the Santa Cruz County ordinance (the CDF was involved on the committee to make sure that the law was compatable with the Forest Practice Act).

The argument seemed to be that because of the regeneration requirements and the restrictions on logging--particularly in the areas where clearcutting's illegal, like down here, where you can only take 60 percent of the trees over eighteen inches, that in effect, you have sustained yield. When you go back every ten years, you take less and less.

Even though the law doesn't really address sustained yield specifically, the mathematics is such because you're required to regenerate, and you can't take it all; in effect, you have sustained yield.

Robinson: I realize that there are a number of ways of bringing about sustained yield, and I think that it can be done under the Forest Practice Act without any--

Steen: I don't know how well it would work in Northern California, where clearcutting is still acceptable.

Robinson: I had recommended this repeatedly--but Hank Vaux is determined to make sure nothing comes of it--I've told it to him, and he just goes, ha-ha-ha.

There are the minimum stocking standards in that Forest Practice Act--and they're contradictory. It says in one place that you have to leave so many seedlings per acre on various sites, and, in another place, it says you have to leave so many square feet of basal area per acre. But there's nothing to say which of these is to be applied.

If you read the law to mean that those are minimum rules to apply to the landowner or the logger, that says that the logger is free to clearcut or not to clearcut, depending upon what he decides to do [laughs]--and that's stupid.

I would interpret the intent of having those two standards in there to mean that the responsibility of applying that section is with the Division of Forestry--not with the owner.

If you can accept that, then they could set rules like this: no timber harvest plan shall be approved if it reduces basal area to less than 50 percent of normal basal area for the site and type. And there should be no final harvest or clearcutting until trees have reached culmination of mean annual increment--or some percentage of culmination of mean annual increment.

Steen: I recently went on a field trip the CDF

sponsored for their Forest Board through this area. Jim Greig, who you know--consulting forester in Soquel, showed two areas he's working on. One is pretty much a hardwood stand; the other is a kind of a ratty looking stand of pine and redwood--high elevation.

He made the statement over and over again that the Forest Practice Act makes it easier to practice bad forestry than good forestry--that the restrictions on the way you count a tree--the fact that you can't count hardwoods--almost eliminates hardwood forest management.

He showed us the area that was a pure stand hardwood, and rather than going in with one of these big Letourneaux and smashing it flat, he wanted to manage the hardwood for the landowner. He thought there was a market for firewood, and that the Forest Practice Act was really holding him back, because you can't count hardwoods. It's conifer oriented.

Robinson: Has he pointed this out?

Steen: Hank Vaux and half a dozen of the Forest Board were on that field trip. This is one of their show-me trips they go on periodically through each region to learn what the land looks like. I'm very much impressed with Jim Greig.

Robinson: Oh, I am, too.

Steen: He made very eloquent statements--not pro-industry or pro-Sierra Club or anything else, but just as a land manager who wants to keep the land in production. The Forest Practice Act actually makes it hard for certain kinds of forest types.

Robinson: It does. The rules adopted under the Z'berg-Nejedly Act were virtually identical with those that were being challenged when the old law was declared unconstitutional, except for the number of words used. The new rules are extravagantly verbose in contrast with their predecessors.

Steen: You seem to have a different understanding of forestry than your contemporaries. How do you account for this?

Robinson: I don't know. Actually, I didn't realize that I didn't think as everyone else in the profession until fairly recently--after I went to work for the Sierra Club actually. I always thought of myself as a slow student trying to catch up with the other guys. I'd like to tell you an anecdote about this.

About three years ago, a friend of mine, who is a landscape architect and pretty much of an idealist in his field, gave up his practice in San Francisco to take a job as co-chairman of the department at Logan, Utah. It's Carlyle Becker, you may know him. He taught at Berkeley for awhile, too, but he was totally out of sympathy with the philosophy of the department there. They were doing decorating stuff rather than integrating landscapes with the building--this he couldn't stand.

We went out to lunch in San Francisco to celebrate this development, and we fell to philosophizing, like we often do, and somewhere along the line I ventured that our golden age was the 1930s and 40s. I was thinking of the movies. Things like The Good Earth and Winterset--there was a string of really superb movies during those years.

He took me down right away, and so I backed up and said, "Well, I guess what I would prefer to have said is that the cultural continuum that I identify with began with the impressionist painters around the turn of the century, and I just love the writings of Somerset Maugham and Hemingway, even Gertrude Stein, who did the same thing with words--and I love the music of Ravel and Debussy, who did it with music.

I think I went on to talk about the kids who find their thing and do it and tell it like it is--I probably carried it a bit too far [laughs].

Then he took me on again. He said, "Well, I share your joy with what you call a continuum, but I'm not so sure it's a continuum. I still disagree with you. I prefer Johann Sebastian Bach. You know why?" I said, "Of course not. Tell me why." He said, "Because Bach made all those other things that you like, possible. Bach revised the musical scale in such a way that you could play any music in any scale. Prior to him, you had to play music in the scale in which it was written, or it just wouldn't play.

"The reason I like you, Gordon, is that you have done for forestry what Bach did for music." [Laughs]

Steen: That's a pretty nice statement.

Robinson: I think it was an exaggeration, but--

Steen: Some people might disagree with that, I suppose.

Robinson: [Laughs] That was fun to hear from a good friend.

Steen: Let's talk about what probably is going to be a long-term controversy, since it's one of our last frontiers--and that's Alaska.

You've mentioned the Tongass suit, but there's more than the Tongass. I don't know what's even really involved. Start anywhere you want on your experiences in Alaska.

Robinson: My first experience with Alaska--Sierra Club or otherwise--was the Tongass suit. I was told that they might need me when they announced that they'd filed suit to stop that 50-year timber sale contract.

Sure enough, I was a little surprised that they hadn't taken me in before, because it just seemed incredible to me that the attorney would file suit and then look for evidence to support his case [laughs] afterwards. Attorneys do that though.

I guess it isn't quite like that. They must shape up a suit, and they'll be secure. But they want to put flesh on the bones afterwards, you see. Anyhow, as a result of that, I went to Juneau and I met with the employees of the Department of Fish and Game there, who did just everything they possibly could to show me around.

They flew me out to Tenakee and showed me the clearcuts there. They took me out to Basket Bay, down to White Water Bay--we just saw all the things that they were unhappy with and the reasons for it.

They introduced me to their librarian and he agreed to make everything possible available to me. I got the impression--and I still have the impression and no one has said this--that that lawsuit began not with the Sierra Club but the State Department of Fish and Game in Alaska.

The Department of Fish and Game was terribly disturbed because they could not get the cooperation of the Forest Service in protecting the fishing streams. I think they eventually filed a suit against the Forest Service, but that was much later.

Anyhow, after I had looked around, I asked to see a copy of the timber management plan. I thought, "Well, I guess that's the place to begin," because the key to all of these things was the amount of timber they cut and the silvicultural practices they employed.

The timber management plan is a very reasonable document and it's very well prepared. There is a reference to some document to support every decision that's made. It's self contained and it's complete. I'd be in asking for the documents to refer to, to substantiate the determination of rotation and all the various decisions that are involved.

I quickly discovered there was a bias that ran all through it. One of the first things I found was that the scaling practice required in

the timber sale contract was not consistent with the scaling practice used in the timber management plan. They cruise the timber on the basis of the volume of a sixteen-foot log Scribner scale--decimal c. The volume tables are based on the assumption that you could cut all of the logs in the trees into sixteen-foot logs beginning at the stump, working up, and measure each one inside the bark at the small end and add it all up and then make a deduction for breakage and defect. That's the basic principle of the cruise.

When they calculate the allowable cut, they use those standards, but when they sell timber, they sell it according to the Columbia River Log Scale--bureau scale. The Columbia River Scaling Bureau measures logs up to 40 feet long as though they were one log, based on the inside diameter of the small end of the log. They discard any fraction of an inch instead of taking it up to the closest inch. The combination of those two things makes a difference of something like 27 percent in the scale that you would get from a given number of trees--given they're standard trees.

In the timber management plan, they have a table there showing how they adjust the inventory scale to log scale. But they adjust it to the scaling practices that were in effect at the time. That was before they adopted the Columbia River scaling rule as their principle for selling timber. So there is a correction. But no correction was made in the allowable cut when they decided to sell timber under Bureau Scale. This left an important discrepancy.

If you didn't look into the details involved, you would assume that all this was very carefully taken care of. The fact is, it was not. There's a difference of 5 percent between the amount of correction they make and the actual log measure.

There was no allowance made for logs that are lost in transit. There've been disputes

over this, but the scaling is done at the mill, after the logs have been hauled to the mill. Well, the beaches of Alaska are just lined with them--you can hardly get on the beach with all the logs. You would have to struggle around, just like walking through a log deck--everywhere in Alaska, because the incidence of losses from storms is so great. I don't know what percentage discrepancy there is from this factor.

I found that the minimum-sized tree that is taken into consideration in selling timber is twelve inches in diameter and will make, I think, two sixteen foot logs. That's the same standard they use here.

In the yield table, anticipating the volume of timber that will be there at the second rotation, they take everything down to seven inches in diameter. Some 10 or 15 percent of the timber at rotation age, according to the yield table they're using, is between seven and twelve inches DBH. So there's another bias.

There was a whole lot of these, and you put them all together, and it developed that they're selling somewhere between two and three times the amount of timber that can be sold under sustained yield. And yet, you study this document and you don't see any errors, because all of these little errors are minor--they'll be 2 percent here, 5 percent there, and so on.

I came to realize that there are a whole lot of specific decisions that one has to make in the process of making a forest inventory and calculating an allowable cut. Many of these decisions are not subject to a precise determination, but they are subject to valid determinations over a range of values, so that you can't say that any one of those specific decisions is wrong. But with every one of them, they move to the edge of the range of credibility, which when combined with the others, tends to magnify the allowable cut, and you get a grossly exaggerated allowable cut.

I couldn't get our attorneys to buy that argument, because they don't understand statistics. If these were precise determinations within a range of value, then they would be right. They think if none of the specific determinations are themselves invalid, then the combination has to be valid. The thing is, each one of these is just at the fringe of probability of being accurate. When you combine those, then they're out beyond the pale, statistically when they're combined, you see.

They just didn't think you could sell this to the judge, because it was too involved. So that testimony did not become part of the trial. I did write it up. I presented a full analysis of this for the attorneys, but they never entered it in the record at the trial.

But they did enter into the record a summary statement which I prepared. I used that argument--plus a lot of other things--showing how the conflict is over the timber that's in the flatlands along the coast, at the edge of the steep slopes.

Another thing there is that it's a spruce-hemlock forest. The spruce is less tolerant--it grows better in the light--it requires light more than hemlock. They're both tolerant species, but the hemlock is relatively more tolerant than the spruce.

The spruce tends to dominate along the waterfront and along the edge of the streams, and on the edges of the landslides. Alaska has very steep, unstable soil. Well, these spruce are as big as our sugar pine. They're six, eight feet in diameter, a couple hundred feet tall, clear bole, two or three sixteen-foot logs. You can find these monsters--marvelous trees--growing right up alongside the landslides. Yet, those are the most unstable soils.

You cut those and the roots decay--the land slides--it's bad! It's only the roots

of those damned trees that are keeping the land up there, you know. I found that along the streams is where the spruce grows, too. You clearcut those and pull them out, you sediment the streams and damage the spawning beds.

The stuff along the shore'd been removed mostly during the First World War for airplane stock, and what hadn't been taken that time went the Second World War for airplane stock. So the big conflict really was over who got the spruce. If environmental concerns were taken into consideration, you really couldn't sell the spruce to be clearcut.

I tried to make these things clear. The strategy of the industry's attorneys was to keep me off the witness stand. They knew what I was going to do, I guess. They were successful. The judge just never would allow me on the witness stand. At one point, he--I don't know just what his words were, but he said, "Mr. Moorman, I will not permit you to put a witness on the stand to criticize the Forest Service."

Steen: This is a Sierra Club suit against the Forest Service?

Robinson: Yes. Against the Forest Service--the secretary of agriculture--to stop the 50-year timber sale contract to U.S. Plywood. We lost the case, and I think the testimony was solid. I think that if the judge hadn't been strongly biased, we would have won.

Steen: Was that the time the argument was over standing? Or that was an earlier conflict?

Robinson: This was about 1970.

Steen: Maybe I've got it confused with Mineral King. Where was the argument about standing? The Sierra Club was--

Robinson: That was in Mineral King.

Steen: Okay.

Robinson: Now the judge agreed that we had standing to sue. There was no question about that. His decision was that the Forest Service was required only to consider multiple use. They didn't have to do anything about it.

Steen: That's interesting.

Robinson: And that they had considered it, and he didn't want to second guess the professional people in their decision-making. So he ruled against us.

Champion International had by the time the suit got to court hired I think a group of seven scientists--environmentalists--to prepare a series of studies on how they could conduct this timber sale and minimize the damage to the environment. One of them was Starker Leopold.

I never saw any of the other reports, but Starker came out with a report which showed that--oh, I should go back a little bit. I was in Juneau when Mr. Nelson--he was vice-president of the company--held a press conference in the lobby of the Baranof Hotel.

Steen: Art Nelson?

Robinson: I've forgotten his first name, but I think it was--but I'm not sure of that. He's a tall, good-looking man with short-cut, gray hair.

Steen: That must be him. He has just retired.

Robinson: He was a very effective, pleasant guy. Well, he introduced this panel of scientists. A couple of students from Humboldt State College, who were in the audience, began asking questions. One of them in particular zeroed in on Starker Leopold. I guess he was a student of wildlife biology at Humboldt, and it bothered him that this guy would allow himself to be hired to whitewash this atrocious timber sale--which he thought was atrocious.

So he asked Starker, "Well, do you have any authority to carry out the recommendations you make?" He said, "No, all I can do is make recommendations." Then he asked Mr. Nelson, "Are you in any way obligated to implement the recommendations of these people--Dr. Leopold?" And Nelson said, "We will carefully consider any reasonable recommendations that Dr. Leopold makes."

The kid said, "You'll only consider it?! Then you don't agree to enforce it." He said, "Well, no, we don't agree in advance--we have to see what they are first."

Then he turned to Starker and pinned him right to the mat. Starker was really embarrassed--his face was all red, and he finally wanted to know why, under the circumstances, he undertook to--was willing to contract with these people. Starker simply said, "Well, I thought maybe I could do some good."

I have a hunch that pricked his conscience to the point where he did some good. I don't know. Maybe it was significant in his life. But anyhow, a year or two later, Starker came out with this study on the impact of the 50-year timber sale contract on wildlife habitat in southeast Alaska.

He pointed out that in order to protect wildlife, to keep the population at a reasonable level, it would be necessary to greatly reduce the amount of timber to be cut, and to permanently reserve a considerable proportion of the virgin timber in the sale area.

They offered two alternatives: One was to stretch out the amount of timber to be cut to 100 years instead of 50, and to withdraw about 15 percent of the timber for wildlife. The other was to cut the timber in 50 years as provided in the contract, but to permanently withdraw 23 percent of the timber for wildlife.

In essence that's what the recommendations were. He made his reasons very clear. I can't remember the details with respect to all of the wildlife species. I can give you an idea what sort of thing was in their report.

He and Reginald Barrett, who's a grad student who did the field work for him in this, mapped the migration routes of the deer around Hood Bay. They found that the deer live in the high elevation above the timber. You know, in Alaska the timber goes up these steep slopes for about 1500 feet and then above that it's all browse land.

They browse up there during the summer months when the snow's not on the ground. Then there are game trails (routes) along the streams, along these landslides, they find their way down to the beach in the winter, and they live on blueberries in the wintertime--and seaweed on the beach.

Their main staple is the blueberry. The blueberries need sunlight to grow--and partial shade. The deer need trees to protect them from the snow. Near the base of each tree, there's a cavity in the snow where the deer can stand up against the tree. You've seen that.

If you clearcut, there's no habitat for the deer. Then a thick stand of young growth comes up which is so dense that the blueberries won't grow, and it takes 80 years, I think, he said, for the stand to naturally open up enough for the blueberries to begin to return. It has to be older than that for them to have enough blueberries to feed them.

So, they've got to preserve some of this land along the shore and the game trails for protection and for feed for the winter, or destroy the deer herd. And the deer herd, of course, is the principal food for the native peoples who live in Angoon--and the greatest deer herd in Alaska is on Admiralty Island.

These were careful observations and well-planned stuff. We went to court. I guess by this time we had appealed. We went to the appellate court with the grounds we had new evidence--this Leopold-Barrett report. So the appellate court ordered a new trial. We got Reginald Barrett to come back from Australia.

Steen: All on the basis of this one report.

Robinson: Yes. We got him to come and testify, and he was very persuasive. He knows his stuff and he's clear in what he says. The judge was very appreciative and complimented the man for his lucid description and told him this was an education for him to hear all this. It was really fine.

But again, he wouldn't let me on the witness stand to show that they're cutting so much timber that it was impossible to carry out any such recommendations.

This time, the judge did not hand down a decision. He sat on it for a long, long time, and we couldn't figure out what was happening. It must have been a year and a half. Then the next thing we knew, Champion International petitioned the Forest Service to cancel the contract. They forfeited their deposit.

I can't help suspecting that behind the scenes, the judge and the Forest Service and other factors in the timber industry worked out a deal whereby they would buy off Champion International if they dropped the contract, rather than go through and wait for a decision. Because if they did get a decision, it would apply to all the national forests, and they didn't want a decision. Somebody did something to buy them off.

I think that both because that's the way it went, and because I have found that's the way the Forest Service operates in my experience with them.

Steen: What bargaining power does the Forest Service have? To give them a sale somewhere else in another state?

Robinson: There are various things they can do. I'd like to give you some examples of the kinds of things that make me feel that this is how they operate.

When I was working for Southern Pacific Land Company, the Forest Service tried some experimental control burning on lands near ours. Once, these fires got away. Once, we had a fire in which the Forest Service was responsible. There was another case of trespass when they sold some of our timber. Here were deals where we filed suit against the Forest Service, and there were damages due. But they never let them get to trial.

What they did was to come around and bargain with us. What they did in the trespass case was to offer some equal value timber off some other land to one of our purchasers. I've forgotten just how that worked.

They just work around until they find some way to avoid a court decision, because this would be embarrassing and it might be a precedent for other things. Yet, it would settle the deal.

Having had several such experiences with them, I feel quite sure that that would be their approach under the circumstances. I think this accounts for what happened, although I have no direct knowledge concerning that particular event.

As to what they could do for Champion, I really don't know.

Steen: They must buy a lot of Forest Service timber in the Northwest.

Robinson: They do, they do. A lot of it they buy for Shasta Plywood at Anderson. You know they took over the McCloud Lumber Company mill in McCloud.

Steen: I didn't know that.

Robinson: U.S. Plywood did. Then when U.S. Plywood was absorbed in turn by Champion, then that put Champion as one of the principal applicants for timber in the McCloud Flat.

The Forest Service has a lot of timber in there. They might have made some deal there. Inasmuch as this was a national sale, it had to have the approval of the chief of the Forest Service. I presume they could bargain on a national level. You see, any deal like that would have to be made within the area of jurisdiction of the parties, but as this sale was approved by the chief of the U.S. Forest Service, they could make a deal anywhere in the United States.

Steen: Have you been involved with the RARE II?

Robinson: Oh, peripherally. Very little. Six years ago I guess they sent me on a whole tour of the D2 lands. I went up to Anaktuvik Pass. then went on to the Wrangles, looked at the additions that were proposed for McKinley National Park, and went out to Kodiak--helped the local Alaska Conservation Society there with the proposed law suit to stop the Perenosa Timber Sale on Afognak Island. [See Appendix J]

I don't know what ever became of that. I prepared a comprehensive report criticizing the timber management plan on the Chugach National Forest on much the same grounds as I did the one on the Tongass. I don't know what they ever did with it.

The things I discovered were first, that there's virtually no commercial timber--commercial forest land--in the proposed Wrangle Mountains National Park. There's some timber, but not commercial timber on the flats north of McKinley, which they wanted.

There was hardly a tree in the area around Anaktuvik Pass. A few little willows as high as this table--that's all. And that was a huge

park. The Forest Service wanted it because people are proposing multiple use. They can mine it, and log it, and hunt in it, and do everything with it.

We met with the Eskimos to find out what they wanted. The principal spokesman for them is a guy named Riley Morey. He's just a wonderful young man. [Softly] Ah, he was just great.

He has an interesting past. He was drafted to fight in this man's army and served his time here in the States; then worked in the oil fields in Arizona, I think for a while. There he met a Navajo girl--beautiful Navajo girl--married her. He decided he didn't want to live down there. He wanted to go back to the nomadic life with the Eskimo. He took her with him.

So here he was in Anaktuvik Pass, living in a prefabricated house for which he had to pay fifty dollars a month to BIA; forced to demolish the sod house that they had formerly lived in, because they had ruled you can have only one house on one lot.

He has to buy oil from somebody to heat this house. They used to use oil from the animals they killed. He resented this. He was going to move out. But he first wanted to help them get an adequate settlement under the Alaska Native Claims Settlement Act. He was trying to coordinate the applications of the native villages and the native corporations, so that they would acquire all of the valley lands that are used by the migratory caribou herd.

Then they wanted a national park made out of the upper high country, and they wanted that national park to contain a special provision allowing subsistence hunting for the native peoples. That combination would solve their problems.

I came back and advocated that for the Sierra Club and I haven't heard whether it was seriously considered or not. I think it must

have been. Many of the things we do are not in writing. I think it's still in their minds. We work with the native peoples wherever we have common interests, and we certainly have there.

Steen: We've talked about Monongahela, Randolph-Humphrey, RPA, the National Timber Supply Act, Forest Management Act of '76, the California Practices Act, Redwood Park, the Tongass Suit. That's quite a bit for one day. Do you have some other particular episode, philosophy, or statement?

Robinson: I've worked on a number of other things that seem pretty much as significant as these as they come to mind, but I don't know that I would add them. What you want is examples.

Steen: Examples of the kinds of things that you've done for the Sierra Club.

Robinson: Right. The one thing I'd like to see included is a policy. I'd like to describe what I think is a conservationist policy for forestry. I think that this is applicable throughout the world.

I have presented this to conservation groups in Canada, all over this country, New Zealand, and Australia, and I find virtually unanimous approval. While I can't be a spokesman for these people without their consent, the very fact that I find enthusiastic support for it every time I describe it, no matter where it is, I dare say that this is a model policy with regard to forest management for the conservationists.

The policy is this: First of all, I think that we should withdraw as much as possible of the remaining virgin forest, wherever it is, to be kept in its natural condition permanently. I don't think it's possible to go too far with this because the opposite extreme has already occurred. I don't know of any country where more than a small percentage of the forest land remains in that condition.

Second, it's important to draw distinctions between commercial timber and commercial forest land. Commercial timber consists of trees which are of sufficient value to justify cutting them and hauling them away. Commercial forest land is land with a capacity to grow timber sufficient to return a reasonable profit on investment-- I should say, a reasonble profit on the investment in forestation. There is much commercial timber standing on non-commercial forest land. That should be withdrawn from exploitation and managed as protection forest for wildlife, watershed, recreation.

Third, I think that on the commercial forest land that remains after withdrawal of the virgin forest and the submarginal lands, on the publicly-owned commercial forest land, we should insist upon multiple use forestry. For this purpose, I have my own definition of multiple use, because multiple use, as you know, is ambiguous in the Multiple Use-Sustained Yield Law. At least it appears to be.

I'd say multiple use forestry consists of managing the forest within the following guidelines: First, practicing sustained yield-- and I have my own definition of that, because, again, sustained yield is subject to various interpretations and definitions.

I define sustained yield for this purpose as consisting of limiting the removal of timber from one's ownership or from each administrative unit, generally not to exceed 200,000 acres, to that quantity that can be removed annually in perpetuity, and in which the quality may improve and the quantity may increase, but neither will ever decline.

The second guideline is using a selection system of management in contrast with clear-cutting and evenage management. By that I mean keeping the openings in the forest created by logging no larger than necessary to meet the biological requirements of the forest type and species involved.

I believe that the silvics of the commercial species should be applied in the management of the forests. I'm not advocating that the openings be kept so small that only the shade-tolerant species grow and that they come to dominate the forest. That's not the idea at all.

The idea is not to use the knowledge of silvics of the commercial species as an excuse to cut more timber than can be sustained or to cut very large areas and convert them to monocultures.

The third guideline for multiple-use forestry is to allow the dominant and codominant trees to reach full maturity before cutting them. I see no objection to thinning and doing stand improvement work at frequent intervals, but I think that the dominant trees should be allowed to reach their full maturity in order to have a sustained yield of high-quality timber.

Maturity, again, cannot be precisely defined. I liked the definition that was used by Judge Maxwell in the Monongahela case. In essence, he said that trees are mature when they have substantially ceased in height growth and the diameter growth is in decline.

I accept that, providing that it also means that the trees are allowed to reach an age necessary to produce a sustained yield of high quality lumber. If there's conflict, it should go a little beyond Maxwell's decision. If you've examined trees, you realize that a tree mature by Maxwell's definition isn't necessarily a very old tree--70 years with pine, for example.

The fourth guideline is to preserve the habitat for all of the naturally occurring species of plants and animals that live in the area. The reason for this is that we do not know very much at all about the interrelationship of species. We know enough to know that the various species are important to each other.

I think it's axiomatic--and I can't prove this--but I believe it's axiomatic--that the combinations of species that exist are together because they have successfully withstood all the hazards that are peculiar to the area in which they grow.

The species that we have--the combinations that we have--have marched up and down the continent here repeatedly with the coming and going of ice ages. There's been accelerated evolution of species, in North America at least, because of the ice ages. The struggle for survival has been intense. Only those combinations that can make it are there, and I therefore think that we should respect those combinations.

We know a little about the importance of alder as a nitrogen-fixing species. The alder is a species, the roots of which exude something that inhibits the spread of Poria weirii root rot of the conifers.

We know that ceanothus is a nitrogen fixer. We know in the southern states that dogwood supplies the surface soil with calcium, and calcium is the mostly frequently lacking nutrient in those soils.

In Australia, we find that there's an understory of wattles, they called them--it's the acacia--and those do exactly the same as the alder here. So there are these combinations.

Well, that's enough to make the point, unless you want to mention the hole nesting birds that eat the insects and live in dead trees. You just have to keep it all together. That's the fourth point.

Then the fifth one is to take extreme precaution to protect the soil. Most forest soils are fragile. They're more fragile than the agricultural soils in the lowlands.

Foresters, during my lifetime, have been performing as though the soil theory had somehow been discredited. I'm assured by soil

scientists that this is not the case. It's now believed to be as important as it ever was, and there's no change in attitude. Yet it's ignored. We must do something about that.

That's multiple use forestry. So that's the prescription for managing the publicly owned commercial forest lands.

Now, for the private forest land, I think we should require at least a decent level of sustained yield management on private commercial forest land. I don't believe in forcing owners to grow timber or to cut timber that's on land that they own if they don't want to, but I do think that there should be some way of identifying the commercial forest land and insisting upon at least a decent level of sustained yield management.

I'd go farther than that if the customs and mores of our society would permit it, but I think that's about as far as we can go with the law as it now stands.

Steen: That's a good way to end. Thank you very much.

Appendix A

RESUME GORDON P. ROBINSON MARCH 1966

QUALIFICATIONS FOR:

Forest Manager
Instructor in Forest Management
Appraiser of Forest and Recreation Properties

PERSONAL DATA:

Born in British Columbia, April 7, 1911; married, daughter and two sons, all attending universities.

EDUCATION:

BS Forestry, 1937, University of California.
Variety of in-service training programs.

PROFESSIONAL EXPERIENCE:

1939-1966 Forester, Southern Pacific Company, San Francisco. Entered service of S.P. Land Department during period of liquidation. Studied policies of other railroads and was instrumental in bringing about shift from liquidation to policy of sustained yield timber management. In 1949 I was brought to San Francisco where I piloted through the change, conducted a forest inventory, estimated allowable cut, hired and trained a staff, and negotiated timber sales for annual gross income averaging $1,250,000.

My most important achievement was the development of a unique method of all-aged selective forest management which provided a sound basis for preserving the aesthetic values while maximizing growth under sustained yield.

I also did the following:

Developed a recent forest inventory using variable plots and EDP, providing for further sophistication of management techniques.

Devised a method for determining stocking of young stands comprising various ages of trees.

APPENDICES

PROFESSIONAL EXPERIENCE, cont'd.

Devised a method for cruising timber based on height-diameter curves by site and species for quick, accurate volume estimates, site determinations and approximations of growth.

Taught staff members to cruise and appraise timber.

Reviewed appraisals.

Negotiated rights-of-way with U.S.F.S., some complicated.

Worked out several methods for making stumpage appraisals.

Devised job descriptions and qualifications for evaluation of staff and to provide incentive.

Negotiated settlement of a long standing dispute with the Internal Revenue Service concerning March 1, 1913 timber values.

Represented the Company to county assessors, developing very good rapport.

REFERENCES:

James P. van Loben Sels, President, Southern Pacific Land Co., Room 205, 65 Market St., San Francisco 5, Calif.

Kermit A. Cuff, Chief Forester, Southern Pacific Company.

De Witt Nelson, Director, California State Department of Natural Resources, Natural Resources Building, Sacramento, Calif.

Everett Jensen, Division of Lands, U.S.F.S., 630 Sansome St., San Francisco 11, Calif.

Albert W. Sauer, Division of Assessment Standards, State Board of Equalization, Sacramento, Calif.

Ronald Sperry, Chief Timber Appraiser, U.S. Internal Revenue Service, 450 Golden Gate Ave., San Francisco, Calif.

Appendix B

NON SIERRA CLUB ASSIGNMENTS

Becker, Berridge, and Julin, Landscape Architects, 1971

Kern Plateau Association, 1971

Huntington Lake Association, 1971-76

Alaska Conservation Society, 1972

Mike Leon, Wyoming, 1971

Gualala Land Development Corp., Cazadera, 1974

California Coastal Commission, 1974

Southern Pacific Company, 1974

Friends of the Sierra, 1974

Kodiak-Aleutian Chapter, Alaska Conservation Society, 1974

Joseph L. Miller, Portland (Bull Run Watershed), 1974-75

Australian Conservation Association, 1975

Canberra, Australia House of Representatives, 1975

Central Clearing House, Santa Fe, 1975

Newton County Wildlife Association, Fayetteville, Ark., 1976

The Headwaters (landowners group), Grants Pass, 1975

Wilderness Society

Friends of the Earth

Texas Committee on Natural Resources, 1976

Appendix C

EXCELLENT FORESTRY

by GORDON ROBINSON

Forests form and thrive best where there are no people--and hence no forestry, and those are perfectly justified who say: Formerly we had no forestry science and enough wood; now we have that science, but no wood. . . Germany formerly contained immense, perfect, most fertile forests. But the large forests have become small, the fertile have become sterile. Each generation of man has seen a smaller generation of wood. Here and there we admire still the giant oaks and firs, which grew up without any care, while we are perfectly persuaded that we shall never in the same places be able, with any art or care, to reproduce similar trees. The grandsons of those giant trees show the signs of threatening death before they have attained one-quarter of the volume which the old ones contained, and no art nor science can produce on the forest soil which has become less fertile, such forests as are here and there still being cut down. . . . Without utilization, the forest soil improves constantly; if used in an orderly manner it remains in a natural equilibrium; if used faultily it becomes poorer. The good forester takes the highest yield from the forest without deteriorating the soil, the poor one neither obtains this yield nor preserves the fertility of the soil."

The foregoing was extracted from the Foreword to Principles of Silviculture by the late Frederick S. Baker, Professor of Forestry and Dean of the Forestry School of the University of California. It is interesting to note that he was quoting from the preface to Advice on Silviculture, 1816, by a famous German forester named Heinrich Cotta, and that the piece was also used by Dr. B. E. Fernow to introduce the American Forestry Quarterly in 1902. Thus, we have it from three great foresters spread over a period of 150 years that the ideal forest is where there are no people.

The quality of forestry in the United States is low and getting lower despite all the encouraging reports we get these days to the contrary. Most industry continues to cut sawtimber faster than it grows, and to consume whatever timber it can buy without husbanding its own lands. The quality of management of our national forests is being eroded under pressure from industry. Many people are questioning these matters. I propose therefore to describe excellent forestry together with its justification to provide the layman with a basis for judging the quality of timber management wherever it is encountered, or at least to know what questions to ask.

Forestry is defined as "the scientific management of forests for the continuous production of goods and services." The practice of forestry with the objective of obtaining the maximum of volume and quality of products per unit area through the application of the best techniques of silviculture and management" defines intensive forestry. But silvicul-

Reprinted from CONIFER, Winter 1969

ture consists of silvics modified by economics, and silvics is defined as the ecology of trees. To avoid confusion resulting from consideration of shifting economic factors, I am using the phrase "excellent forestry", which might also be referred to as applied silvics.

Excellent forestry has four characteristics, each of which requires considerable elaboration for clear understanding. First of all, cut must be matched with growth -- that is to say the amount of timber removed from one's property must not be more than the amount that will grow in the cutting interval. This is generally referred to as sustained yield and where one is working with virgin timber, this means continuous production at an even rate with the aim of achieving at the earliest practicable time an approximate balance between net growth and harvest either by annual or somewhat longer periods.

Excellent forestry also implies growing timber on long rotations, generally speaking I would say from 100 to 200 years. Rotation is the age of trees at the time of cutting plus whatever time is required for re-establishment after logging.

A third characteristic of excellence is selection management in preference to alternative systems such as clear cutting wherever this is consistant with the silvics of the species involved. This implies frequent light cuts, generally not removing more than 10% of the volume at one time. Where clear cutting must be practiced, as in the management of highly intolerant species, the openings should be kept as small as possible, preferably no greater in diameter than half the height of the surrounding timber.

Finally, excellent forestry is characterized by infinite care to avoid damage to the soil, the all-important basic resource.

The advantages of such management are truly overwhelming. The lowest fire hazard of all the cover types found in our western forests is mature old-growth timber. While the highest hazard is dry grass, the second highest is logging slash on cutover land and stands of saplings. This situation results from the fact that in the mature forest air is trapped by the full canopy thus providing a micro-climate kept humid by transpiration of the trees. Also it is cool because of the shade. Fire hazard is primarily a function of fuel moisture content and, in the mature forest, moisture is relatively high and remains so even in the middle of hot summer days. Furthermore, the mature forest is comprised mostly of trees free of branches close to the ground and their bark tends to be fire resistant. Thus, even when fires do occur, they tend to go along the ground burning merely leaf litter and debris and oecasional patches

of reproduction. A dramatic illustration of this principle occurred in the Haystack Fire of the Klamath River Country in 1956. At one point the fire roared up the south slope of the Siskiyous, going through three adjacent ownerships situated at about the same elevation and having the same cover type. One was a section of national forest which had been logged a few years before in accordance with the Forest Service Region Five standard marking rules. This had resulted in the removal of about 60% of the volume comprising primarily the oldest and largest trees. The second piece was virgin timber, and the third was property belonging to a lumber company that had recently removed everything permitted under the California State Forest Practice rules. That involved cutting about 90% of the solume, and spared only trees under 20 inches or so in diameter. The fire killed about half of the timber on the national forest parcel, killed every living thing on the lumber company's land, but as near as I could tell did not burn any more than a few patches of small reproduction in the virgin forest, although it did burn the decayed heart out of the few standing dead trees which fell, leaving a few hollow logs to become habitat for a variety of friendly little living things. Clearly, the forester who maintains the full canopy and practices light selective logging is least likely to suffer disaster from fire.

While foresters frequently insist upon the felling of all dead trees during logging operations for fire suppression purposes, it is frequently overlooked that these very trees are required habitat for many birds who perform great service in controlling insect enemies of our forests. These birds include woodpeckers, chickadees, titmice, nuthatches, creepers, mountain bluebirds, and the violet green swallow.

Light selective logging, or clearcutting in small openings provides maximum assurance against windthrow. During the great Columbus Day storm of 1963 along the west coast, a tremendous amount of damage occurred in heavily cut stands. Relatively, the damage was much less in virgin timber.

Damage from insects and diseases is far more severe where clearcutting is practiced than in the selection forest. Where large areas are clearcut, as in conversion to even-age management, certain insects may breed in the slash in great numbers and later attack the young reproduction.

Where clearcutting is practiced there is always a tendency to establish plantations of one species rather than mixtures without regard as to how the planted species naturally occur. A pure stand forms an ideal situation for a disease to build up to epidemic proportions. Infection is direct and rapid from tree to tree and if one species is destroyed there is nothing left. The most hazardous pure stands are even-aged stands because fungus parasites are often virulent during only one stage of the development of the trees. Pure stands of trees outside their natural range are particularly liable to difficulty. Pure stands, those composed of a single species, are particularly susceptible to disastrous outbreak. For instance, outbreaks of the hemlock looper have been especially destructive only in stands composed of a high percentage of hemlock, where a heavy mixture of other species occurs, infestation soon thins out and

loses its destructive power. Attacks of the spruce budworm also have been most destructive in stands composed of a high percentage of the firs and Douglas fir. It is particularly important that the cuttings in stands that normally grow as mixed types should not favor the leaving of the single species. Since most insects and diseases of forest trees are limited rather sharply to one or a few host plants, mixed stands offer far fewer opportunities for epidemics than do pure stands. In the case of insects, every tree in a pure stand offers food and breeding ground. In the case of fungi the liberated spores find favorable hosts everywhere. In both cases destructive concentration can readily be built up in pure stands.

Plantations of young pine in California are being invaded by a variety of little-known insects, some indigenous and some imports. They damage the stand by reducing growth from sap sucking and defoliation. Some insects kill the tops of the leaders causing crooked or forked stems. Dead stubs make easy entry for heart rot and, in a number of cases insects will kill the trees outright. The pine reproduction weavil and the more familiar bark weevils are principal agents of tree killing in young stands.

Fomes annosus, the agent which causes decay in the butt logs of a good many fire-damaged old trees is a minor nuisance in a virgin forest and tends to be eliminated almost entirely in the selection forest. However, where clearcutting is practiced, the disease spreads through the stumps and roots of the felled timber to become an epidemic, killing young trees.

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

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

As a tree matures and grows in girth, the cambium produces longer and thicker walled cells. The length of fibres laid down in new growth in conifers increases with the age of the tree. Length generally varies from 1 millimeter at age one to about 4 millimeters at age 70 -- after which

length remains constant with increase in age. This means that where timber is being grown for fibre, the longest fibres occur only in that part of the tree which has grown after age 70. It would seem to be good business, therefore, to grow trees to an age of 100 to 200 years and to use for pulp chips the slabbing from squaring or rounding the logs, and making high quality lumber and plywood from the remainder of the core. This is essentially what is done with our virgin timber today, but not with trees grown on a short rotation.

What has been said about the length of fibres is true also of the density or strength of fibres. That part of the tree which has been lain down by the cambium layer after age 70 contains the strongest fibres as well as the longest ones. There seems to be one slight difference, however, between this and the length of fibre in that as trees grow more slowly they tend to have dense fibre in the crown as well as in the lower bole. Consequently the tops of trees grown on a long rotation are superior for pulp purposes.

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

We hear much talk these days from both foresters and industry to the effect that they cannot afford to grow trees on a long rotation or to great size and that they must clearcut for economic reasons. These appear to be false impressions. A recent study showed that the cost of felling, limbing, and bucking trees from 45 to 48 inches in diameter cost $7.04 per thousand board feet in contrast with $18.36 per thousand board feet for trees between 12 and 16 inches in diameter. Similarly the cost of yarding and loading was twice as much for trees 12 inches in diameter as it was for trees 30 inches in diameter.

The February, 1969 issue of the Journal of Forestry reports the findings of a research team studying comparative logging costs under four cutting specifications ranging from single tree selection to clearcutting. They concluded that logging costs from standing tree to truck do not differ appreciably with cutting method, and the forest manager is therefore free to choose a cutting technique on the basis of management and silvicultural considerations other than costs.

A recent study in the redwood region indicated a logging cost of $11.37 per thousand board feet in a selection forest and $11.45 per thousand board feet where clearcutting was practiced. This was a study conducted by the U. S. Forest Service in the Redwood Purchase Unit. A similar study made in the pine region showed that where clearcutting was practiced, involving 17,000 board feet per acre, 133 man minutes per thousand board feet were expended. Heavy selection cutting involving 13,000 board feet per acre required only 118 man minutes per thousand board feet. But, surprisingly, a light, sanitation-salvage cut involving only 3,000 board feet per acre cost only 119 man minutes per

thousand, considerably less than clearcutting.

These rather surprising figures are explained by the fact that where selective cutting is employed we are removing only the largest trees which gives us the greatest handling efficiency during each step of the logging process.

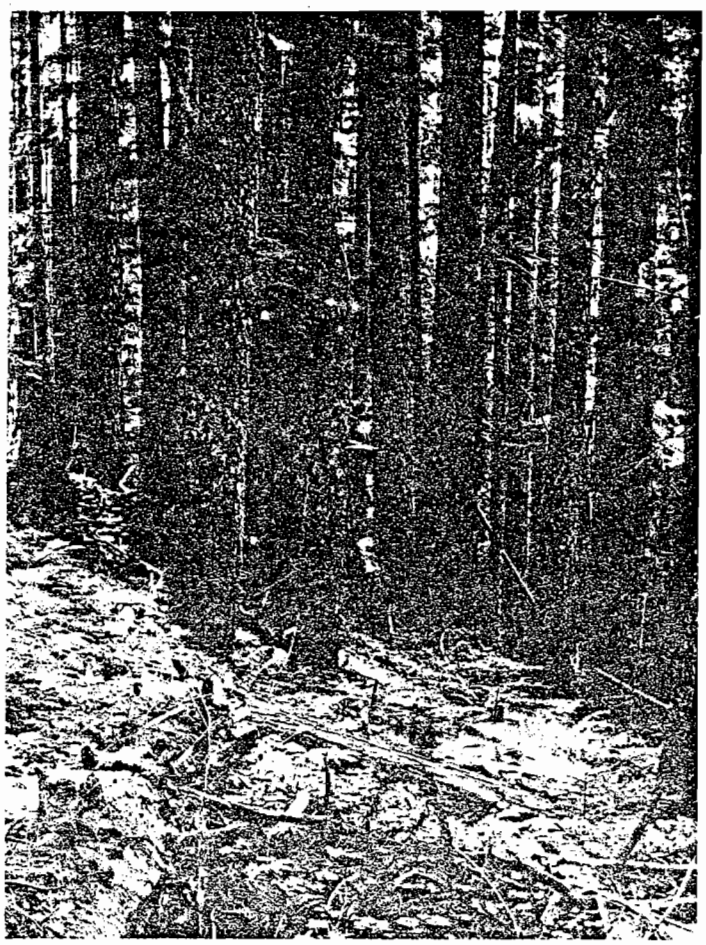
The size of clear cut openings is a slightly different consideration. Here, presumably, we would not have the compensating factor of large trees as in selection cutting, although clearcut patches may be selected on approximately the same basis as individual trees. An experiment was conducted in 1965 by the Forest Service in the mixed conifer area of the Sierra to determine the relative cost of logging various sized openings. The openings ranged from a diameter of 30' to 90'. Costs for logging were found to range from $7.04 to $7.99 per thousand board feet, and the author observed that the differences were not statistically significant, concluding thereby that the size of the opening is irrelevant to the cost of logging.

Selection management provides us with many advantages in obtaining reproduction. There is no difficulty with seed source. We are assured of reforestation with trees acclimated to the particular site. Collecting seeds in one area for reforestation in another is far more hazardous than most foresters realize. In general, naturally regenerated stands are less susceptible to disease than those artificially reproduced.

Seedlings are preferable to sprouts, because sprout growth is usually more susceptible to disease. At best, trees are more or less injured by planting. Roots are particularly subject to injury thus increasing the incidence of damage or disease. Less obvious are difficulties arising from collecting seed from different life zones than those in which they are sown. Experience shows, for example, that trees grown in low elevation from seed gathered in a higher elevation are apt to be late in starting their spring growth. This can be serious in localities where we experience long summer droughts as in western United States. Conversely, trees grown in a higher elevation from seed collected in a lower elevation may burst their buds and start to grow at the first signs of spring only to be killed back by heavy frosts. More subtle difficulties arise when trees are planted outside their natural range. Silviculturists have warned of this since forestry began in the United States, but so far they appear not to have been heard. For example, foresters have been planting Monterey Pine in northern California because of its rapid growth and presumed desirability for pulping. It had generally been assumed that the limited natural range of this species to the Monterey peninsula was the result of the tree failing to migrate back northward following an ice age. Now we are finding, however, that a native rust is killing off the plantations. Evidently there is something about the soil or climate of the Monterey peninsula that permits the tree to grow there despite presence of this rust. Or it could be that some alternate host for the rust itself is unable to grow in the area. Future research will probably give us an explanation. The point is that the general principle of relying upon natural reforestation is a valid one that should not be ignored.

American foresters notoriously disregard the effects of logging practices upon soils. This is particularly true of the post war era in which logging has become highly mechanized and where much of the remaining timber being logged is on steep ground. The oversized and unwieldly equipment used by logging operators is totally unacceptable in the concept of excellent forestry. Logging should be conducted with light, small equipment, preferably rubber tired, in order to be maneuverable around trees left in selection forests and to function without disturbing the soil. All logging should be planned and supervised to prevent this damage, and no logging should be permitted where complete protection of the soil cannot be assured.

Clearcutting promotes erosion and compaction of the surface soil, particularly where mineral soil is exposed. Clearcutting allows organic matter to become dessicated, slowing down decay in dry climates such as characterize much of our western forests. Clearcutting exposes the forest floor to intense insulation and evaporation and, as a result, the normal soil life of fungi, bacteria, worms, microscopic plants and animals of all kinds are destroyed or at least greatly changed, with fauna and flora of open lands coming in. This is usually undesirable. Clearcutting invites invasion of vegetation that severely competes with forest tree seedlings. In the northwestern United States, clearcutting of forests and forest fires have increased floods from watersheds from both rain-snow melt floods and snow melt floods. Where stocking of the forests has recovered with time the flood peak discharges again decrease.



Conditions in natural stands point strongly to the fact that there is no factor more important in relation to disease than tree vigor. Stands on good sites are generally not damaged significantly by native diseases, but those on poor sites often suffer severely. If site is allowed to deteriorate by careless logging, particularly by excessively bulldozing the surface, subsequent stands are going to be less vigorous than their predecessors and more subject to loss through insects and diseases.

Something should be said also for maintaining the natural mixture of species that occurs in the forest. This, too, is best done through reliance upon natural reproduction. Some species make excessively heavy demands on soil nutrients when planted in pure stands. They may do well in youth but later slow up and deteriorate. The admixture of species that makes light demand on the soil and whose leaf litter decomposes readily into a mild, rich humus is often necessary. Furthermore, pure stands may fail to utilize the site completely, either because they are composed of an intolerant species and in consequence have thin open crowns which presumably fail to utilize the sunlight completely, or because they are shallow rooted and utilize only part of the soil.

Selection management with careful planning of roads and logging is of great importance in sustaining the quality and productivity of the soil for these many reasons. It tends to maintain soil porosity and its water adsorption qualities thus reducing erosion and flood damage. Care of the soil and maintaining a full canopy also protects the habitat for fish in streams by keeping the water clean and cold and by preserving spawning beds. Silt and slime, the products of erosion, are unsuitable for spawning.

Excellent forestry largely preserves the beauty of the natural forest. I daresay that for most people such well managed forests will quite adequately serve most of their wildland recreational needs. By maintaining the natural beauty of the forests we therefore take a good deal of pressure off wilderness. In contrast, present practices on the national forests, and to a greater extent on private forest lands, is creating an ever increasing demand for more wilderness.

If national parks and wilderness areas become the only places of natural beauty we have for outdoor experiences, people who do not care for wilderness per se will crowd in with those who do. This would not only increase the use of such places but would add to the clamor for roads and other nonwilderness development. Furthermore, if we should reach the sad state of having no large, old-growth timber except within our national parks, we would surely face a great clamor to log that too. Indeed, the overture to this clamor is already being heard. We had a foretaste in the ridiculous arguments advanced in opposition to the Redwood National Park which will be all too familiar to the reader.

Excellent forestry costs nothing but restraint and offers the greatest gifts a forest can provide, except in the ideal situation where there are no people -- and hence no forestry. ■

Appendix D

STATEMENT OF GORDON ROBINSON
ON BEHALF OF THE SIERRA CLUB
BEFORE THE HOUSING SUBCOMMITTEE
OF THE HOUSE BANKING AND CURRENCY COMMITTEE

March 26, 1969
Washington,D.C.

Mr. Chairman, I am pleased to be able to appear today on behalf of the Sierra Club. I am its Forestry Consultant from San Francisco, California, where its general headquarters are located. Founded by John Muir, the Sierra Club is now in its 77th year, with 70,000 members throughout the United States and in many other nations. I am a professional forester with over 30 years experience, most of which was in management of the largest industrial forest holding in the State of California, the Central Pacific Land Grant.

Broadly speaking the purpose of the Sierra Club is to help man develop a lasting relationship with the environment. Because of forward-looking action on the part of the Club in the 1890's, California was the first western state to have extensive national forests established within its borders. John Muir had much to do with this work and served on one of the early national forest commissions appointed by President Cleveland to make field investigations and recommendations on the subject. The Sierra Club is therefore concerned with the quality of timber management on our public forests as well as with the preservation of areas of great scenic beauty.

I am appearing before you to oppose any action that would arbitrarily increase the allowable cuts from our public forests, shorten their rotations below optimum yield computed on a board foot basis, or in any way compromise the principle of even-flow sustained yield management of our public forest lands.

Such actions would be bad forest management for two reasons: First, they would reduce both the quality and the quantity of timber produced in the long run from our public forests. The rotation, or the age at which trees are cut on our national forests,has already been shortened to the point of diminishing returns for the production of material of useful sizes. Any further shortening of the rotation will of necessity compound the problem of future timber supplies when our population, and supposedly the demand, will be greater than at present. Optimum rotation is the age at which the average growth of a forest starts to decline. If timber is removed every time it reaches that age, the total yield will be maximum in the long run. I explained the fallacy of shortening the rotation below optimum in a letter to the Honorable Robert F. Smith, Chairman of the Public Lands Interim Committee of the State of Oregon, dated May 29, 1968. A copy is attached as Appendix 1 to this statement.

Second, industry proposals would lower the quality of management by ignoring many subtleties of forestry. For example, the length and strength of wood fibre produced by a growing conifer is proportional to the age of the tree. Fibres in seedlings are only about 1 millimeter long, but the length of fibre laid down in new growth becomes greater as trees grow older, until it reaches a maximum of about 4 millimeters at around 70 years of age. The best fibre comes therefore from that part of a tree that has grown after it reaches 70 years of age. Good management would require growing trees to such age that the portions removed from logs in squaring or rounding for lumber or plywood manufacture would mostly have grown after the tree reached age 70.

T here are many biological and technical considerations that must be observed in forest management beyond the mere quantity of wood produced.

To acquaint you with a variety of these considerations I am attaching Appendix 2, entitled Excellent Forestry.

We have a right to expect excellent forestry on our public forests, where all the subtleties of good forestry are observed, and it is urged that Congress make no compromises with this principle.

Representatives of forest industries are proposing that the rotations be shortened and allowable cuts be increased on our federal forest lands in response to recent increases in lumber and plywood prices. Representatives of the home building industry are lending their support in belief that the price increases are the result of a timber shortage, and that making more timber available from the national forests will help their industry.

I do not know why lumber prices are increasing, but the forest industry's proposals for relief to the home builders raise some important questions that should be answered before any action is taken:

1. Are the large lumber and plywood firms deliberately running up stumpage prices in competitive bidding to drive smaller firms out of business?

2. Are high stumpage prices a reflection of high lumber prices or is it the other way around? Are high stumpage prices causing high lumber prices?

3. Log exports to Japan are often mentioned as a factor in this matter. If domestic timber is really in short supply, how does it happen that a poor nation like Japan can outbid American business men?

4. If lumber is really in short supply, why are forest industries trying to keep homebuilders from developing substitute materials.

5. If as industry representatives assert, private forests are managed better than our federal forest lands, why doesn't the industry accept state forest practice laws as strong as the regulations governing our federal forest agencies?

6. Are the big outfits bidding up stumpage prices to establish high values for capital gains tax purposes?

7. What is the affect of the capital gains provision of the Internal Revenue Code on private timber management?

8. Should the capital gains provision be repealed, or should it be supplemented by other measures to encourage adequate private forest management?

9. Are the allowable cuts on our public forests determined on the basis of reliable statistics and tested methods of timber management? Or, are they compounded out of rationalizations to accommodate political pressure?

It is our suspicion that industry has failed to properly manage its forest lands; and that they are trying to cast the blame on the national forests and the owners of small timber holdings. We also suspect that the lumber industry has been pressing the Forest Service to relax the quality of management on our national forests for many years, and that the standards are already too low and must be improved. Old growth timber on the national forests is already being cut at a considerably greater rate than can be sustained, according to their present inventory figures. Furthermore, there is good reason to believe that their inventory is inflated, and that much of the present allowable cut in prime operable timber is justified by estimated growth in marginal stands, and timber situated on unstable soils. Edward P. Cliff, Chief of the Forest Service, hinted at this by his testimony before the Senate, March 21, 1969, when he showed that the allowable cut has been increased from 5.6 billion feet in 1950 to 11.4 billion feet in 1969. We urge Congress to look searchingly into these matters. As a lead to areas of

inquiry on the management of our national forests and the private forest lands, I am attaching Appendix 3 entitled, Whatever Happened to Tree Farms?

This statement shows how the lumber industry has, in general,been overcutting its own lands for fast profit, and covering up by sponsoring "tree farms" and weak forest practice legislation. It also shows how some of their previous campaigns have adversely affected the management of our national forests.

Finally, I want to address myself to forest industry's claim to be seeking an increase in the wood supply to help solve the housing shortage. We urge that any approach to the housing problem be concerned with the TOTAL ENVIRONMENT. We must not sacrifice the forest environment by reducing the standards of their management only to build more suburban sprawl. Guidelines to a constructive solution to our housing requirements might be:

1. To avoid, or minimize the use of wood, in order to lessen the demands on our diminishing forest resources, and to preserve or permit restoration of our forest environment. This might very well be accomplished by simply accepting higher prices for lumber, plywood and other wood products, as suggested by the Forest Service on page 2 of Possibilities for Increasing Supplies of Softwood Lumber and Plywood, February 24, 1969.

2. To avoid further expansion of suburban sprawl, which complicates environmental problems by building on our best agricultural lands, wasting people's time in needless frustrating daily transportation, and polluting our atmosphere with ever increasing use of private automobiles.

3. To house people comfortably and in beautiful high-density complexes, planned to provide for adjacent open space, and made available at reasonable prices. Experimental planning that meets these requirements is being done I understand by Jones and Laughlin Steel Corporation, the H.B. Zachry Co. of San Antonio, Texas, Lockheed Aircraft, United States Steel, Aerojet General,

Appendix E

FRIENDS OF THE EARTH
124 SPEAR SAN FRANCISCO CALIFORNIA 94105
415 495-4770

November 1, 1978

Mr. John McGuire, Chief
Forest Service, USDA
P. O. Box 2417
Washington, D.C. 20013

Dear Mr. McGuire:

On behalf of Friends of The Earth I offer these comments on the proposed regulations to guide land and resource management planning on the national forest system, published in the Federal Register Thursday, August 31, 1978.

I find that the Committee of Scientists has narrowed the permissive qualities of the law in ways to accelerate the cutting of timber, but has not implemented Section 6 by using their expertise as scientists to suggest constraints that would protect multiple uses values, preserve or enhance the productivity of the forest and its security from pests and other destructive factors by application of biological principles. I thought this was the purpose of appointing a committee of scientists.

The regulations are difficult to follow. They are frequently ungrammatical, and meaning is often obscure. Sometimes references precede the text, other times they follow, and notations all look the same. So by the time you discover what you are referred to you have forgotten why you wanted to know. A list of definitions is supplied, but often the writers ignored them and improvised terminology of their own. What for instance is meant by "base harvest schedule"? What do they mean by "fourth decade"? Fourth from what? Will that decade ever arrive? Or, has it perhaps already passed? It could refer to the decade of the Crucifixion for all the reader can tell.

As nearly as I can interpret the regulations, the crucial part has to do with the timber resource, particularly Section (4) "determination of the allowable sale quantity."

The long term sustained yield capacity and the base sale quantity (which I infer means the sale quantity for the plan period) are to be based on utilization standards and management intensity anticipated to reflect those of the fourth decade (and I infer that to mean forty years after the period for which the plan is being

prepared). Ever since the Forest Service began taking surveys of the nation's timber resources, you have been reporting cut far in excess of growth. Because of this persistent imbalance and concomitant improvement in utilization there is no escaping a forecast that industry will be making full use of the total volume of all trees cut forty years hence. Therefore this regulation means that culmination of mean annual increment must be determined by using total cubic content of all trees, and therefore requires the shortest possible rotations. According to yield tables, this implies rotations ranging from 25 years in the Southern pine region to 40 or 50 years in the Ponderosa pine region, and about 65 years in the Douglas fir and Spruce-Hemlock forests of the West. These are much shorter than rotations presently used on the national forests, and whole tree logging which includes stumps could shorten them even further.

The interdiciplinary teams established under Section 219.5 of the regulations, and Section 102 of the National Environmental Policy Act, are required to formulate alternatives that include determination of the quantity of timber that may be sold. Each alternative must include a calculation of the long-term sustained yield capacity, and the sale quantity for the plan period, according to the regulations. This, because of the requirements described in the above paragraph, means that all of the alternatives required under the Environmental Policy Act either will be based upon the shortest possible rotations and will differ only in the rate of liquidation of the timber beyond rotation age, or they will be unlawful. In other words, the proposed alternatives will either be obviously unacceptable such as "custodial management", or they will be based upon the shortest possible rotations. Alternatives that come to grips with the widespread complaints about management of the national forests would not be allowed.

There are two things wrong with this. First, it misinterprets the National Environmental Policy Act, and would defeat its purpose. It does this by preventing the multidiciplinary teams from offering any practical alternatives other than maximum timber cutting precipitated by the shortest possible rotations. Second, it is totally inconsistent with the Multiple-Use Sustained-Yield law, and with the environmental provisions of the Forest Management Act of 1976. Basic to any planning on commercial forest lands in the national forests must be the realization that multiple use values are proportional to rotation, and to diversity. The longer the rotation and the more diverse the forest, the greater are the multiple use values. Hence, the multidiciplinary teams should be directed to work out a variety of alternatives that reflect varying emphasis on multiple use values, assuming various rotations and methods of management, such as frequency of cutting, proportion of timber to

be cut in various cutting cycles, and condition of trees to be cut or left. Also, the team should comprise experts in more than merely two of the multiple uses. As you have it, plans for many forests would be prepared by the Timber Management Officer and a Watershed man, and no one else.

The departures from even-flow sustained yield which are authorized are all on the side of excessive cutting; none on the conservative side for environmental or any other reasons. Authorized departures are as follows:

A) When none of the alternatives offered by the multidicipline team meet Regional plan objectives.

That means even-flow or non-declining sustained yield can be exceeded when the productive capacity of the forest turns out to be inadequate to meet the nationally imposed sale quotas within a policy of non-declining sustained yield.

B) When goals will be enhanced by more rapid liquidation of old growth.

That means even-flow sustained yield can be abandoned when a shortened rotation contrived by anticipation of total utilization of the cubic volume of all trees can make trees beyond rotation age seem to be surplus.

C) When implementation of the base harvest schedule would cause instability or dislocation in the economic area in which the forest is located.

That means you would abandon sustained yield when a local industry has exhausted the private timber resources, and find their mill capacity can not be met with sales from the national forests if the national forests are managed under a policy of even-flow sustained yield. This situation is becoming common through out the West.

All of these are wrong and should be dropped. Upward departures from even-flow sustained yield should be permitted only:

A) When required salvage operations can not be completed within a plan period.

B) When a major national emergency requires wood products in excess of what can be provided within a policy of even-flow sustained yield.

Downward departures from even-flow sustained yield should be authorized:

A) To allow for risk inherent in even-age management and monoculture.

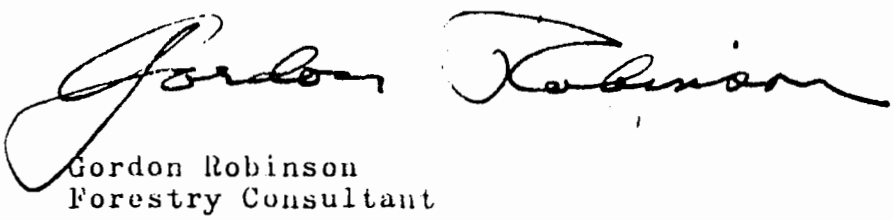
B) To provide for error of estimate in determining allowable sale quantity.

C) To accomodate any of the multiple uses other than timber production.

D) To provide for a sustained yield of high quality and high value timber in contrast with mere cubic volume.

I conclude that the regulations limiting the alternatives available to the multidiciplinary teams, the requirements that sale quantities be calculated to reflect utilization of the total cubic content of all trees, and the authorized departures from even-flow sustained yield combine to require that the commercial forest lands of the national forests be converted to energy intensive short rotation tree farms. These regulations apply the principles of the Green Revolution to forestry. They distort if not defy the principles of multiple use forestry which were required under the Organic Act of 1897 until repealed by the Forest Management Act of 1976. But, in my opinion they are inconsistent with the Multiple-Use Sustained-Yield act of 1960, and therefore the Forest Management Act of 1976.

Sincerely yours,



Gordon Robinson
Forestry Consultant

Appendix F

CONGRESSIONAL RECORD

TESTIMONY ON AMENDMENT NO. 487 TO S. 2962 OFFERED BY MICHAEL McCLOSKEY FOR THE SIERRA CLUB TO THE SUBCOMMITTEE ON PARKS AND RECREATION OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS OF THE U.S. SENATE, WASHINGTON, D.C., AUGUST 17, 1966

PART II

Mr. Chairman, my name is Michael McCloskey. I am the Conservation Director of the Sierra Club. At the field hearings in California in mid-June, I presented a statement to your committee outlining the economic impact of the proposal the Sierra Club has made for a Redwood National Park on Redwood Creek in northern Humboldt County. That statement drew in large measure on preliminary studies done for us by a professional consulting forester, Mr. Gordon Robinson. Since the time of that hearing, Mr. Robinson has completed his studies. I would like to summarize his findings for you here today and request that his report, which contains some revised as well as new figures, be published as an appendix to my remarks.

Mr. Robinson's study finds that the 90,000 acre national park which we propose "will have little adverse effect on the forest industries of Humboldt County." He bases this finding on two facts: (1) that the three timber firms affected are liquidating their sawtimber supplies in the next decade or so in any case; and (2) that the two new pulp mills in the county will have to look far beyond the county's borders for their permanent chip supplies. These facts indicate that it is only a matter of a few years timing in any event before the county loses the employment in sawtimber that these firms provide. And they indicate that the loss of the park lands as potential chip producers will not significantly affect the outlook for supplying raw material for the two pulp mills.

His study shows specifically that only one firm would have to cease operations immediately, Arcata Redwood Company. Georgia-Pacific would have enough old-growth timber to continue operations for 6 more years at its current level of production. Thus, instead of liquidating in 13 years, it would liquidate 7 years sooner. The Simpson Timber Company would be affected only slightly. Proposed park acquisitions of its lands would shorten the lifespan of its old-growth sawtimber operations by perhaps only 1 year, reducing the liquidation time from 12 years to 11 years. The study also shows that these firms do not have enough young-growth timber in sufficiently advanced age classes to sustain their operations when they have exhausted their old-growth. Thus, in 20 years all three firms will no longer be operating sawmills even if a park is not established. Establishment of a park will merely hasten the inevitable, but it will also leave the county with a substantial asset that will continue to return annual dividends in the form of increased tourism. If a park is not established now, this asset will be destroyed; and in 20 years, the county will still find itself without these mills to support its economy. In economic terms alone, it makes good sense to move now to establish a Redwood National Park on Redwood Creek.

PROPOSED REDWOOD NATIONAL PARK—H.R. 11723, COHELAN—IMPACT OF THE SIERRA CLUB'S PROPOSAL FOR A REDWOOD NATIONAL PARK ON THE FOREST INDUSTRIES OF HUMBOLDT COUNTY—SAN FRANCISCO, CALIF., AUGUST 5, 1966

(By Gordon P. Robinson, consulting forester)

The Sierra Club has asked me to prepare a statement of basic statistics concerning the proposed Redwood National Park on Redwood Creek (H.R. 11723—COHELAN), to help draw into late focus the impact such a park would have on Humboldt County's forest industries.

The general character of the proposed federal acquisition, as of March 1, 1966, is shown in the following table:

Table 1

	Private land	Prairie Creek State Park	Total acres [1]
Virgin timber:			
Slope	32,510	----------	----------
Flats	160	----------	----------
Total	32,670	10,000	42,670
Residual timber, young growth, woodland, and noncommercial timberland	36,070	2,420	38,490
Clear-cut timberland	3,400	----------	3,400
Prairie (grassland)	3,160	----------	3,160
River bottoms and flat meadows	300	180	480
Beach	1,500	400	1,800
Total	77,000	13,000	90,000

[1] Estimated from 1-inch scale topographic maps.

TABLE 2.—*Total old growth timber in Humboldt County as of Mar. 1, 1966*

Firm	Net volume (Humboldt scale long logs) (in million feet board measure)	Annual cut (in million feet board measure)	Estimated years life of old growth logging
Georgia-Pacific	2,400	165	15
Arcata Redwood	1,100	50	22
Simpson Timber Co.	1,100	77	14

TABLE 3.—*Private old growth timber in Humboldt County affected by proposed park as of Mar. 1, 1966*

Firm	Inside park			Outside park			Total	
	Acres	Volume	Percent	Acres	Volume	Percent	Acres	Volume
Georgia-Pacific	30,200	1,460,000	61	99,700	930,000	39	129,900	2,390,000
Arcata Redwood	22,500	1,060,000	98	400	20,000	2	22,900	1,080,000
Simpson Timber [1]	16,100	120,000	11	140,300	980,000	89	156,400	1,100,000
Total	68,800	2,640,000	58	240,400	1,930,000	42	309,200	4,570,000

[1] This firm also has extensive holdings in Del Norte County and a mill at Korbel not considered here. Life of their Del Norte County operations is presumably similar to that in Humboldt County.

TABLE 4.—*Old growth timber in Humboldt County belonging to firms affected by proposed park as of Mar. 1, 1968*

Firm	Inside park (M ft. B.M. net long log scale, Humboldt rule)		Outside park (M ft. B.M. net long log scale, Humboldt rule)		Total volume
	Volume	Percent	Volume	Percent	
Arcata Redwood Co	960, 000	98	20, 000	2	980, 000
Georgia-Pacific Corp	1, 160, 000	55	930, 000	45	2, 099, 000
Simpson Timber Co	72, 000	8	870, 000	92	942, 000
Total	2, 192, 000	55	1, 820, 000	45	4, 021, 000

About half the land to be acquired is virgin timber. Most of this belongs to three firms in table 5.

For practical purposes the proposed park affects the forest products industries of Humboldt County only as it affects the three main ownerships in the area. Estimated total volume of old growth timber belonging to these firms, and life of their old growth logging is shown in table 2.

These timber volumes were estimated by determining the assessed value of each firm's properties and the corresponding acreages from Humboldt County tax records, subtracting the estimated assessed value of cutover lands to determine the timber value, and dividing the result by estimated assessed value per M. ft. B.M.*

By inspection of the tax rolls it is evident that bare land is assessed at about $5.00 per acre. The assessed value of timber is about $2.00 per M ft. B.M. for both Redwood and Douglas fir. This figure falls midway in a fairly narrow range of possibility determined from use of current stumpage prices and appropriate discount factors presented in the *Assessor's Handbook*.[1]

The annual cut of these same firms was taken from published material.[2]

Estimate life of old growth logging was determined by dividing estimated volume by annual cut.

Not all of this timber is within the proposed park however. Table 3 shows the distribution of this timber as to location within the park or outside of it.

TABLE 5.—*Land to be acquired by ownership and type as of Mar. 1, 1966*

	Virgin timber	Cutover and other land	Total acres [1]
Georgia-Pacific Corp	16, 030	14, 170	30, 200
Arcata Redwood Co	15, 310	7, 190	22, 500
Simpson Timber Co	1, 330	14, 770	16, 100
Lyons	100	2, 700	2, 800
Miscellaneous [2]	220	5, 180	5, 400
Total private land	32, 990	44, 010	77, 000
Prairie Creek State Park			13, 000
Grand total			90, 000

[1] Estimated from 1-inch scale topographic maps.
[2] Includes some Humboldt County property.

The three firms have been continuing to log while proposed legislation is being debated. Probably the earliest date by which a bill could be passed and logging stopped is March 1, 1968, two years beyond the date of the above figures. Assuming the three firms continue to log their lands both inside and outside the boundaries of the proposal at the same rate they logged within the area 1965–66, their old growth resources will then be about as shown in table 4.

So far as old growth timber is concerned if the Redwood National Park is not established in Redwood Creek, timber volumes, rate of cut and life of old growth lumbering of the three affected firms will be about as shown in Table 6:

TABLE 6.—*Total old-growth timber of affected firms in Humboldt County as of Mar. 1, 1968, assuming the park is not established*

Firm	Net volume (Humboldt scale long logs)	Annual cut	Estimated life of old growth logging
	M ft. B.M.	*M ft. B.M.*	*Years*
Arcata Redwood Co.	1, 000, 000	50, 000	20
Georgia-Pacific Corp.	2, 090, 000	165, 000	13
Simpson Timber Co.	940, 000	77, 000	12

But if the park is established, their old growth volumes and life expectancy will be about as in Table 7:

* *The Humboldt County Assessor has an excellent inventory of old growth timber from a recent survey by nationally known consulting foresters.*

[1] *The Appraisal of Timber Property* issued by The California State Board of Equalization, Sacramento.

[2] *Forest Industries*, V. 93, No. 6, May 1966 and V. 93, No. 1, Jan. 1966.

234–371—5465

TABLE 7.—*Total old growth timber of affected firms in Humboldt County as of Mar. 1, 1968, assuming the park is established and logging therein stops as of that date*

Firm	Net volume (Humboldt scale long logs)	Annual cut	Estimated life of old growth logging
	M ft. B.M.	*M ft. B.M.*	*Years*
Arcata Redwood Co.	----------	(1)	(1)
Georgia-Pacific Corp.	930,000	165,000	6
Simpson Timber Co.	870,000	77,000	11

[1] Nil.

In short the life expectancy of old growth logging by the affected firms in Humboldt County with and without the park will be approximately as shown in table 8:

TABLE 8.—*Old growth life expectancy of affected firms as of Mar. 1, 1968*

Firm	Without the park	With the park	Drop
	Years	*Years*	*Years*
Arcata Redwood Co.	20	0	20
Georgia-Pacific Corp.	13	6	7
Simpson Timber Co.	12	11	1

So far we have been discussing only old growth timber belonging to the three firms affected by the proposed park in Redwood Creek. It is also important to understand the status of the forest products industries in Humboldt County as a whole. For convenience this will be considered under two headings: the outlook for continued old growth lumbering, and prospects for a second-growth economy based on Humboldt county's resources.

Old growth lumbering

The Pacific Southwest Forest and Range Experiment Station is making a study of Humboldt county's timber resources at the present time. However, their report will not be released for a year or two. The best presently available source of information appears to be a report by John G. Miles, Consulting Forester, dated March 10, 1966.[3]

According to Miles the major companies in Humboldt County own 75% of the private mature and residual timber in the county, and they have a combined mill capacity of 421 million ft. B.M. per year, or 36 percent of the whole. He also states that the major companies cut more than required for their own mills and sell the excess to minor producers. He estimates that the minor companies have a life of 4½ years on the average at their present rate of production, starting with 1966. The implication is that 64% of the capacity existing at the start of 1966 will be shut down for want of timber by the end of 1970 although their life may be prolonged somewhat by purchase of public timber. This is independent of any consideration of the proposed park.

Miles does not identify the major firms. However the Humboldt County Assessor releases an annual statement of timber depletions of the Big Six companies. These comprise: Arcata Redwood Company, Georgia-Pacific Corporation, Simpson Timber Company, The Pacific Lumber Company, U.S. Plywood Corporation, Weyerhaeuser Co.

Of these, it is estimated that U.S. Plywood Corporation has timber resources in Humboldt County to last only about five years at the present rate of production, and Weyerhaeuser cleaned up their timber and sold out last year.

The only major concern not already considered therefore is The Pacific Lumber Co. A reliable observer informs us that this firm has sufficient timber resources to almost sustain itself permanently at their present rate of production. That is in the neighborhood of 120 MM ft. B.M. per year, according to trade journals.[4]

The only other old growth timber available to Humboldt County industry is the allowable cut from national forest and other public forest. Miles[3] estimates that 203 MM ft. B.M. of the allowable cut from these sources will go to Humboldt county mills. (The figure is stated in Humboldt long log scale to conform with the other figures quoted above.)

Five years hence, the old growth industry in Humboldt county should be about as follows in table 9:

TABLE 9.—*Anticipated old growth timber production, Humboldt County 1970*

Firm	Without the park	With the park
	M ft. B.M.	*M ft. B.M.*
Arcata Redwood Co.	50,000	----------
Georgia-Pacific Corp.	165,000	165,000
Simpson Timber Co.	77,000	77,000
The Pacific Lumber Co.	120,000	120,000
National forest and other public forest	203,000	203,000
Total	615,000	565,000

In fifteen years the situation will be very different. See Table 10:

[3] *Miles Report of Humboldt Timber* published by the Humblodt Beacon, Eureka, March 10, 1966.

[4] *Directory of the Forest Products Industry* published annually by Miller Freeman Publications, Portland, Ore. Figures above from 1964 edition.

234-371—5165

TABLE 10.—*Anticipated old growth timber production, Humboldt County 1980*

Firm	Without the park	With the park
	Mft. B.M.	*Mft. B.M.*
Arcata Redwood Co	50, 000	
Georgia-Pacific Corp		
Simpson Timber Co		
The Pacific Lumber Co	120, 000	120, 000
National forest and other public forest	203, 000	203, 000
Total	373, 000	323, 000

The second growth economy

The emerging second-growth forest industry in Humboldt County so far consists principally of a rash of stud mills and two pulp mills. The stud mills require a minimum investment and are designed primarily to make green 2 x 4's out of young sawlog sized timber. They may be regarded as transient. In contrast the pulp mills require heavy investment in the neighborhood of $40,000,000 each. Our concern with the effect of the proposed Redwood National Park on industry therefore mainly concerns the latter.

First let us consider what raw material is available. From a survey conducted in 1962, Miles estimates that the present total volume of young growth is somewhere between 4,840 MM ft. B.M. and 7,713 MM ft. B.M., about one third of which is below sawlog size. However, Miles makes no mention of the fact that stud mills have been operating on merchantable sized young growth between 1962, the date of the survey, and 1968, the date of his estimate.

We have no information as to distribution of this timber among the many ownerships. Table 11 is developed by prorating his estimates according to acreage.

TABLE 11.—*Young-growth timber on private commercial timberland—Humboldt County, 1968*

Firm or class of ownership	Acres (thousands)	Percent	Young growth (million feet board measure net Scribner scale)	
			Minimum	Maximum
Arcata Redwood Co	22	1.7	82	131
Georgia-Pacific Corp	118	9.1	440	702
Simpson Timber Co	163	12.6	610	970
The Pacific Lumber Co	139	10.7	518	825
Miscellaneous timber concerns	285	22.0	1,062	1,702
Ranches and farms	473	36.6	1,775	2,820
Recreation, reservoir sites, residences, etc	94	7.3	353	563
Total	1,294	100.0	4,840	7,713

Requirements of the new industries

Each of the two pulp mills, Crown-Simpson and Georgia-Pacific, one operating and the other under construction, has an estimated capacity of 180,000 tons per year. At 40% efficiency,* their annual requirement is estimated to be 450,000 tons of wood chips, each.

Experience shows that 1000 board feet log scale will produce 1000 board feet of lumber and 1000 lbs. of chips; or 2,300 square feet of plywood and 1,000 lbs. of chips; or 4,600 lbs. of chips.

Raw material to supply these mills will come principally from some combination of mill residues and young growth cut specifically for the purpose. Woods residues are considered the least practicable source of wood fibre at this time. Estimates of the source of material may therefore be made by applying the above conversion factors to production figures in tables 6, 7, 9 and 10, and young growth in table 11.

It does not appear that these mills can supply themselves with chips from their own lands.

While the proposed park would take 25% of Georgia-Pacific's land and 10% of Simpson's Humboldt county holdings, this would have little affect on the above estimate because the lands to be acquired are mostly either virgin timber, or too recently logged to provide much merchantable young growth even as pulp logs for the next 20 years. See table 5.

It is even questionable whether the whole of Humboldt County can supply these pulp mills. It all depends on how much of the sawlog sized young growth goes to chips. A high estimate assumes 75%, and a low estimate 25%. Both estimates include mill residues from all Humboldt County manufacturing of lumber and plywood, from both old growth and young growth.

*100 lbs. of dry chips contains 40 lbs. of lignin and 60 lbs. of cellulose. Typically a sulphate mill recovers about 40 lbs. of fiber per hundred lbs. of chips.

TABLE 12.—*Chips available from pulp operators' own lands and manufactures (assuming table 11 is approximately correct)*

	Tons per year	
	Simpson	Georgia-Pacific
Mill residues:		
Humboldt County	75,000	83,000
Korbel mill (using Del Norte County timber)	35,000	----------
Young growth: (20-year liquidation or sustained yield at 5 percent):		
Humboldt County lands	112,000	80,000
Del Norte County lands	30,000	----------
Total	252,000	163,000
Share of requirements (percent)	56	36

TABLE 13.—*Chips available from all timber in Humboldt County*

[Tons per year]

	Low estimate	High estimate
1966	1,040,000	1,220,000
1970	758,000	938,000
1980	638,000	818,000

Requirements for the two mills is estimated to be 900,000 tons per year.

In all probability, these mills can not be operated at capacity without importing chips from Del Norte and western Trinity counties, and possibly by sea from more distant places, at least for a long time to come. In any event, the proposed Redwood National Park in Redwood Creek will have little effect on the future of the developing second growth timber economy of Humboldt County.

Conclusion

The proposed Redwood National Park (HR 11723-COHELAN) will terminate the operations of one firm which has only about 20 years to go. Also it will shorten the life of the old growth lumbering of two other firms by a few years. However, Humboldt county is faced with inevitable reduction of old growth lumbering in the immediate future in any event. The two firms whose operations will be moderately affected are just getting started in the pulp business, but they will not be seriously affected by the park proposal because the park won't take much of their young growth and they can not supply themselves with chips from their own lands anyway. They could just barely supply their mills if they obtain the entire production of Humboldt county's private commercial forest land, and will most likely depend heavily on imports. The park therefore will have little adverse effect on the forest industries of Humboldt county.

Appendix G

A CRITIQUE OF AN ANALYSIS OF THE BUFFERS AND THE WATERSHED MANAGEMENT REQUIRED TO PRESERVE THE REDWOOD FOREST AND ASSOCIATED STREAMS IN THE REDWOOD NATIONAL PARK

BY

Edward C. Stone,

Rudolf F. Grah,

and

Paul J. Zinke

FOR THE UNITED STATES PARK SERVICE
April 30, 1969

Gordon P. Robinson
Forestry Consultant
Sierra Club
July 17, 1969

Revised
August 8, 1969

INTRODUCTION

Mr. Michael McCloskey of the Sierra Club has asked me to review the Stone report of April 30, 1969 on buffers and watershed management to preserve the Redwood National Park. The National Park Service contracted with Edward C. Stone February 14, 1969 to examine the Park boundaries and provide a plan of action for arriving at specific recommendations needed to implement Section 3 (e) of Public Law 90-545 establishing the Redwood National Park.

GENERAL OBSERVATIONS

Although this report contains a great deal of important and useful information, particularly in describing the hazards to the Park resulting from logging operations on tributary adjoining lands, the recommendations for protection are totally inadequate in the Redwood Creek Corridor. The authors fail to consider a number of important observations about redwoods and the redwood forest as reported by other experts in the field.

The objective in prescribing buffers is not clearly stated, but appears to proceed on the premise that accelerated landslides, erosion, and windfall should be allowed. This may be inferred from the first 19 pages of the report. Greatly condensed, the argument is this:

We began our assignment by examining the mosaic of ecosystems that constitute the redwood forest. Then, we considered the kind of management required to preserve significant examples of the primeval redwood forest and associated streams. We could not evaluate potentially destructive inputs without characterizing the biological structure to be pre-	p. 3, para. p. 3, para. p. 3, para.

served, i.e., the primeval redwood forest, and the kind of management that is needed to assure its preservation.

Fortunately this was simplified by the fact that wilderness values had not been interjected by Congress into the preservation requirement. Thus we were able to focus our concern on the ecological aspects of preservation. p. 3, para. 4

Of major concern was the need for replacement ecosystems over the next 500 years. Consequently, we examined the possibility of developing these replacement ecosystems on the cutover lands included in the park. p. 3, para. 5

We viewed the redwood forest as a mosaic of ecosystems each identifiable by the species present and the successional stage represented. The primeval redwood forest was a mosaic of ecosystems supporting redwood that existed prior to the arrival of modern man. Change is an important dimension of the ecosystem. Not all ecosystems support redwood at any any given point in time. Some are part of successional sequences that do not include redwood. Others are part of successional sequences that have or will ultimately include redwood, but in which redwood is now absent. Plant succession is the ecological process through which the plant cover changes with time. This change is brought about by the replacement of one species by another in response to plant or other induced changes in the environment. p. 4, para. 4 p. 5, para. 1 p. 5, para. 2 p. 5, para. 4

The destructiveness of inputs from adjacent lands and watersheds depends on the Park's management objectives. This forest is a mosaic of ecosystems each developing and changing at its own rate. How and at what point in their development are they to be preserved? Will each be held as long as possible at some particular successional stage by the employment of interruptive factors, or will they all be completely protected and succession allowed to run its course to the climax? p. 11, para. 1

In considering the action required to minimize deleterious inputs we have assumed that preservation means the retention of the mosaic of ecosystems that were present in the primeval redwood forest and that roughly the same proportion of the various successional stages then present will be maintained. This is a big job. Let us review what it entails. p. 11, para. 2

The redwood forest from San Luis Obispo to Oregon was an expression of succession that had taken place in the mosaic of ecosystems involved up to that point in time. Fire, winds, rains, and floods had all played critical p. 11, para. 3

roles in its development. Had history been such that unfettered ecological development had continued for another 1000 years, many of the ecosystems that have been specifically included in the Park because of their advanced successional development would have already advanced to the point that they would no longer be superlative and would no longer be of park quality.

According to our assessment of the overall successional state of the uncut portions of the Park, the climax has not yet been reached in many of the slope and alluvial flat ecosystems. The park manager is charged with preserving fire induced subclimaxes on the slopes and fire-flood induced subclimaxes on the alluvial flats. p. 12, para.1

The development of the preservation plan must be accompanied by a careful program of public education. This is of particular importance with respect to conservation groups not always well-informed on vegetation dynamics and the necessity of managerial manipulation for preservation purposes. p. 15, para. 1

In a successional sense ecosystems dominated by younger age classes are needed to replace those with older age classes as the redwood trees finally die. Ecosystems supporting younger age classes can be readily developed on the cut-over areas now included in the Park. They can be managed so that 500 years from now there will be ecosystems available, supporting 500, 400, 300, 200, and 100 year old redwoods. We do not visualize any insurmountable public relations problems arising during the first 100 years of operations involving the cutover lands. We can see a major problem 100 years from now when 4/5 of the revegetated cutover will need to be manipulated to establish a flow of age classes. p. 15, para. 2 p. 15, para. 3 p. 15, para. 4

The most troublesome public attitude that must be overcome in getting a preservation management program underway will be that of the dedicated conservationists who visualized another wilderness. They want a forest of redwood, established long before modern man's activities became an input into its various ecosystems and from which his inputs can now be excluded. p. 16, para. 1

The most critical area in the Park from a management viewpoint is the upper end of the Redwood Creek corridor. In this area, landslides are a natural feature of the landscape. The Tall Trees need special protection, but that is mainly a simple engineering job. p. 16, para. 3 p. 16, para. 4 p. 19, para. 2

From there the report goes on about potentially destructive inputs, fire, wind, soil and water, land slippage, organic matter, floods, and stream-carried sediments. These are well described although some important considerations are left out, which I refer to further on. Then, a system of buffers and a plan of management is recommended which will allow the destructive forces to operate at an accelerated rate. The hazards so clearly described are almost ignored, unless one assumes "preservation" means permitting destruction to take place in Redwood Creek in order to round out the variety of ecosystems required to maintain the present proportion of old growth redwood forest within the Park, as it shifts from place to place in accordance with Stone's theory of succession.

The report dwells at length on highly speculative ecological changes the authors anticipate over the next 100 to 2000 years. But it fails to consider the dynamics of the redwood forest as it is understood and accepted by other experts in the field. For example, Douglass F. Roy says, "The redwood forest is a climax type. When growing with other species redwood is always a dominant tree." (1) And Emanuel Fritz says, "Virgin redwood forests sometimes are incorrectly called even-aged and over-mature, when, in fact, there is no other forest in the world that can match many redwood stands in range of ages and mixture of vigorously growing and decadent trees." (2)

I propose herein to comment on Mr. Stone's report from the point of view that, unlike his definition, preservation means the application of ecological management techniques to neutralize the unnatural influences of man, thus permitting the natural environment to be maintained essentially by nature. (19)

FIRE

The authors philosophize on the long term ecological significance of fire in the redwood forest, and mention some aspects of unnatural hazards resulting from logging adjacent timber. They fail to mention, however, that fire hazard is a function of fuel moisture content and the proximity of highly inflammable live material to the ground. The lowest fire hazard rating of any of the various cover types found in California applies to virgin old growth forest. (3) This is particularly true of redwood forest because of its occurence in the coastal fog belt, and its very cool, humid quality. In contrast, the almost highest fire hazard is found in fully stocked even-aged stands of saplings and poles. (3) This is particularly true of redwood whose foliage dries out quickly, and is highly inflamable when dry. The authors' recommendations for buffers where virgin timber now adjoins the Park will result in development of the highest possible fire hazard outside of dry grass and sage brush. This is of greatest importance where the timber is downhill from the Park, but is very important in any situation. This problem can be partially avoided by practicing light selective cutting in adjoining virgin timber.

It is strange that the authors make no mention of the excellent research regarding fire hazard reduction that has been done in recent decades in California. (4,5) This information is much more relevant to Dr. Stone's assignment than speculation of possible changes in forest species composition that might result in 100 to 2000 years of absolute fire protection - if indeed that is possible.

WIND

The authors correctly point out that logging greatly increases windthow at the edge of uncut forest. This is particularly true where clearcutting is practiced. They state that in time, the trees exposed to winter winds adjust to the new wind-forces by shifting the point of new wood deposition on the stem and on the roots put under stress. But, they do not offer any estimate of time required, and they indicate that after clearcutting it will take at least 30 years to grow young (P. 67, para. timber in the buffer zone to sufficient size to protect the Redwood Creek corridor containing the Tall Trees and the Emerald Mile. Even this is questionable, because trees are most unlikely to exceed 100 feet in height in 30 years, and it is doubtful that a canopy of that height will be much protection for trees 300 feet high.

There have been some losses due to hurricane winds within the Park, unrelated to man's activities. They mention 1955, 1962, and 1964. Such losses are tolerable in the long range management of a national park. Actually they are one means whereby mineral soil is exposed, permitting natural regeneration of redwood from seed, without important watershed disturbance. However, the acceleration of such losses that will result from clearcutting the slopes of Redwood Creek above the corridor are clearly intolerable. This difficulty also can be overcome, or at least mitigated by practicing light selective logging in the timber above the Park, preserving both the canopy and the present species composition.

Development of even-aged stands of redwood adjacent to the corridor will not provide much protection from wind even when they become tall

enough to be effective otherwise. Shallow rooted trees, such as redwood, are always likely to be uprooted and thrown down by heavy winds, especially when they are growing in moist soils containing little rock. (6) The situation is worse when they are in pure stands, for one tree falls against the next and so on with devastating effects. The entire stand may not be uprooted, but great holes are torn in the canopy, giving widespread opportunity for continuing wind damage. If the stand is interlaced with deep-rooted species, such as Douglas fir, the dangers are reduced and are limited to small irregular patches instead of great contiguous areas. (7)

The even-aged forest canopy such as the authors recommend cultivating (P. 73, para. for the future has a generally well defined, nearly horizontal upper and lower limit. The crowns are short and concentrated at the top of relatively slender stems. Such trees are not at all windfirm. (7)

SOIL AND WATER

The authors correctly point out that much of the soil, particularly along the upper Redwood Creek corridor, and in the Bridge Creek area is highly unstable, (6) and that most of the rest of the soil in the Redwood Creek drainage is moderately unstable when undisturbed, although highly unstable after clearcutting (P. 27, para. 1, p. 40, para. 1.) They mention that in clearcutting 80 percent of the soil will be disturbed. They say (P. 64, para. 1 that 5 to 6 miles of road per section must be built for clearcutting. (P. 54, para. 3 Logging the slope above the Park on the east side will involve 5,160 acres. That means 40 to 50 miles of logging road will be built within the next 5 to 14 years on the east slope above the corridor alone. All

this is in addition to skid trails, which will do even more damage and occupy more space than the roads. While the virgin forest in Redwood Creek has successfully withstood all the great storms of modern times, the authors point out correctly that it is virtually impossible to design roads to meet heavy storm conditions, illustrated by the loss of major state highway bridges and fills during the storms of 1955, 1962, and 1964. In spite of these observations, the authors advocate clearcutting, not only on the upper slopes, but within the buffer zones they propose. (P. 71, para.

Clearcutting will increase the runoff. This has two unfavorable results -- erosion, and fire hazard. As for erosion, the great amount of runoff, particularly during major storms on these unstable soils, will carry huge quantities of sediment which will compound its capacity to erode and therefore do progressively increasing damage as it pours down toward the creek. (P. 37, para. 5) This will unquestionably do tremendous damage as it rips through the proposed buffer zones, gathers momentum and goes tearing through the corridor. Erosion of this type may be observed in the North Fork of Lost Man Creek, and along the road to Gold Bluffs Beach where the forest has recently been clearcut. There is an important difference between those situations and the corridor, however, in that there the logging was conducted in a streambed and the debris has largely moved away, down stream. Along the Corridor, on the other hand, the debris will move throughout the Park, forming alluvial fans perpendicular to Redwood Creek, as may be observed in similar situations along the Klamath River.

The increased runoff due to clearcutting will obviously reduce the penetration of water into the slope above the corridor, thus

reducing the moisture that would normally be available to the roots of trees on the lower slope during summer and fall. Also, fog drip which is an important source of moisture during summer in the redwood forests will be eliminated on the clearcut areas. The resulting decline in ground moisture will result in decreased fuel moisture content and therefore greatly increase fire hazard in that important part of the Park. There is also a strong possibility this will cause die-back in the tops of tall trees in the corridor. (18)

SILVICULTURAL SYSTEMS APPLICABLE TO ADJOINING LANDS

The authors take a narrow point of view in discussing silvicultural systems applicable to adjoining redwood forest and their proposed buffer zones. They discuss the advantages of clearcutting and even-age management in considerable detail but their arguments in favor of clearcutting are based almost entirely on financial considerations, which can be compensated for under the Act. It just happens that protection of the Park from damaging inputs can best be achieved by the selection system of management on the adjoining upslope lands, under even-flow sustained yield and on a long rotation, which I refer to as excellent forestry.

Fortunately, any financial disadvantages to practicing such forestry on land tributary to the Redwood National Park should not be a problem. Congress has authorized the Secretary of the Interior "to acquire interests in land from, and to enter into contracts and cooperative agreements with, the owners of land on the periphery of the park and on watersheds tributary to streams within the park designated to assure that the consequences of forestry management, timbering, land use, and

soil conservation practices conducted thereon, or the lack of such practices, will not adversely affect the timber, soil, and streams within the park as aforesaid."

Excellent forestry has four characteristics. It consists of practicing sustained yield, that is, limiting the cut to the quantity that may be removed annually from ones land in perpetuity. It consists of growing timber on long rotations, 100 years or more. It involves using the individual tree selection system in preference to alternative methods of management wherever this is consistent with the silvics of the species involved. Otherwise, the openings should be kept as small as possible, preferably not to exceed in diameter about one-half the height of the surrounding timber. Finally it requires infinite care to protect the soil, our all important basic resource.

The advantages of such management are overwhelming from the forestry point of view.(8) The selection forest rates the lowest fire hazard of the various cover types extant, as described earlier in this report. Likewise, in the long run, the selection forest suffers the least loss from windthrow also mentioned earlier. Hazards from insects and diseases are least in the all-aged forest of mixed species. Most insects and diseases affect a single species, or trees of a particular age group. The mixed forest therefore presents the least opportunity for spread of these pests.(9)

The highest value of forest products comes from timber grown on long rotations. It is the large old trees that bring the highest stumpage prices and the highest log prices. It is likewise the large old trees that produce the premium quality lumber and plywood. The mechanical and

chemical properties of old and slow grown wood are superior to young rapidly grown material. Slabs and trimmings from old growth timber produce the longest and strongest wood fibre.

Costs of logging and manufacturing are inversely proportional to the size of trees. The lowest unit costs for all phases of logging and manufacturing apply to the large old trees. Conversely, the unit cost of logging small trees is high, too high in our part of the world, to permit thinning operations so much desired by forest managers.(10)

In the all-aged, selection forest all land is constantly producing material of high quality and value. The authors of the report state that "young, even-aged stands tend to more fully occupy the site than do mixed old-growth stands..." This is in error when applied to lands adjoining the Redwood Park. There the clear-cut lands are grossly understocked. The adjoining owners spend a good deal of money on aerial reseeding, with very poor results which I observed.

On the other hand, in a selection system, with small openings here and there to suit the Douglas fir, there would be prompt natural reseeding, and assurance of reforestation without cost.

At this point, it is well to recall some basic characteristics of the redwood forest. Virgin redwood forests sometimes are incorrectly called even-aged and over-mature, when, in fact, there is no other forest in the world that can match many redwood stands in range of ages and mixture of vigorously growing and decadent trees. On a typical 30 acre tract, (not counting more than 1,000 trees under 12 inches in diameter) the trees were:

AGE IN YEARS	NUMBER OF TREES (11)
0-200	696
201-400	197
401-600	183
601-800	105
801-1000	65
over 1000	17

In such dense forest, with trees living to great age, only occasional seedlings are required to maintain full stocking, and occasional redwood seedlings do occur. Also, small redwood trees may be suppressed for over 400 years but still maintain a remarkable capactiy to accelerate growth rates when released, if they are not injured seriously during logging or slash burning operations. (12) For this reason, where a seed source is always available the stand will tend to be fully stocked at all times under a selection system of management. On the other hand, timbered edges of clearcut units have effective seeding distance of only 200 feet uphill under average redwood stand conditions. (20)

The selection forest costs no more to operate than the even-aged clearcut forest. For example the cost of the full-scale logging of old redwood is about the same in selection cutting as in clearcutting, but is more in shelterwood cutting. Figures determined in 1959 and 1960 were: Selection cutting, $11.35 per thousand board feet; clearcutting, $11.45 per thousand board feet; and shelterwood, $14.30 per thousand board feet. (13) A variety of economic studies made in California during the past 30 years all indicate the same thing.

Relying upon natural reforestation, one is assured of seedstock from strains that are adapted to the local site. There have been many disasters in the long history of European forestry where people tried to improve their

forest by bringing in exotics, only to discover too late that there were hidden subtle factors mitigating against their imports. (14) Natural reforestation is also more reliable and less expensive than planting or seeding large exposed areas.

By keeping the openings small and by carefully avoiding practices that contribute to erosion, the porosity of the soil is maintained, and the watershed value also maintained. By preventing erosion, site quality is maintained. A preliminary study of site deterioration in this area due to clearcutting accompanied by massive soil disturbance shows a decline of two full sites. (15) This is the equivalent of a 60 percent drop in productivity in the stocked area. In addition, a sizeable proportion of the area examined where the soil was removed altogether, has shown practically no returning vegetation after 20 years. This loss of productivity is what may be expected on land up slope from the corridor if the owners' present plans are carried out.

Practicing excellent forestry as described here will protect the habitat for fish and birds, and finally, it will tend to maintain the natural beauty of the area.

BUFFER SPECIFICATIONS

In general the buffers recommended other than in the Redwood Creek drainage are satisfactory, although the principles must be applied with considerable flexibility. Specifications for fuel breaks correspond well with research, but should be planned on the ground by skilled men who are well informed of details of phenomena regarding the effects of topography, prevailing winds, types of vegetation, etc. Straight lines

are desirable, for example, and sharp angles dangerous. Hand work is less likely to interfere with esthetic values than use of power tools.

The authors do not mention it, but small areas of adjoining timberlands, whether cutover or not, when up hill from the Park should be acquired rather than managed as buffers. This was clearly the intent of Congress in allowing for minor acreage adjustments. It is rumored that the survey of the Park now underway is indicating a total area within maps NPS - RED-7114-A and B which is slightly in excess of the 58,000-acre limitation. This matter should be resolved by a supplementary Act, rather than through buffer management, particularly where virgin timber is involved. Of particular concern in this regard is a parcel of about 160 acres of virgin redwood forest along the east side of Flint Ridge, east of the Old U. S. 101.

The major difficulty with the authors' recommendations is in Redwood Creek. This area presents an altogether different situation than other lands adjoining the Park. It is primarily in this area that Stone's proposals are unsatisfactory.

To begin with, they recommend that the buffer zone be clearcut in 30-acre blocks. To accomplish that within an 800 foot strip, which is only two or three tree-lengths, will require that the buffer zone be clearcut in strips one-third of a mile long. Actually, clearcuts of that magnitude up against the edge of the park can scarcely be regarded as protection from any of the potential dangers to the Park emanating from up slope.

Second, "uncut areas adjacent to cut blocks will not be cut until full stocking is achieved with trees at least 3 feet tall on the cut

block." It is not clear whether this means stocked with trees 3 feet high; or stocked, with some of the trees 3 feet high. Sprouts of redwood are commonly 24 to 36 inches high at the end of the first year, but often are taller. They may be over 6 feet tall in a year. (15) In any case, full stocking is not defined.

Third, they prescribe a buffer of only 800 feet within which erosion control measures are to apply, yet in one place they say highly active slip zones extend up both slopes for distances up to half a mile (P. 16, para. 3) and in another place they say thousands of feet (P. 34, para. 4). Furthermore, they indicate there is much more fragile soil than shown on the Soil Vegetation maps because of material hidden beneath the surface (P. 17, para. 1).

Fourth, both Arcata National and Georgia-Pacific have recently been granted approval of alternate logging plans by the California State Division of Forestry, permitting clearcutting on the Redwood Creek drainage. If their plans are carried out, they will build about 50 miles of roads plus unestimated miles of skid trails on the north side of Redwood Creek, and a corresponding amount to the south and in Bridge Creek within the next five years or so. In addition they will bulldoze countless layouts to minimize breakage of the giant redwoods in felling.

To permit Arcata National and Georgia-Pacific to carry out their present plans above the proposed buffers would lead to hopeless destruction of the forests along the Tall Trees corridor and the Emerald Mile for reasons described under Fire, Wind, and Soil and Water in this report. That destruction would consist of huge avalanches of mud, rock, and logging

debris forcing its way through the corridor and into Redwood Creek. In some places, particularly along the Emerald Mile on both sides of the creek, major storms such as we experienced in 1955, 1962, and 1964, would shove the forested strip ahead of it, filling and temporarily damming the creek. This will cause heavy scouring along the creek, and flood damage down stream in the town of Orick when the mud dams break. There will also be heavy windfall damage in the corridor, and probably fire damage resulting from the greatly increased inflammability described above, coupled with greatly increased incidence of fire due to presence of many visitors.

Above the corridor, on both sides of the river there will be heavy cuts into the land and major erosion problems, with the land left in a condition similar to the cutover in the North Fork of Lost Man Creek or along the road to Gold Bluffs Beach. In those areas much of the debris has been carried down stream, but the slopes above Redwood Creek have no such outlets. The debris will therefore plunge through the corridor. Because of the wholesale removal of soil in these logging operations, much of the surface area will not revegetate naturally for many years, possibly for centuries.

RECOMMENDATIONS

1. Negotiations should be undertaken immediately with Arcata National and Georgia-Pacific to adjust their production schedules on all lands tributary to Redwood Creek to even flow sustained yield management using individual tree selection for redwood, and group selection for Douglas fir, all based on a long rotation. Arcata has the smallest timber resource of the two and will be the most difficult to convince.

However, there is no reason Arcata cannot reduce their production schedules to match the sustained yield capacity of the lands they still own and will be acquiring from the Redwood Purchase Unit. It is merely a matter of balancing the budget, painful but ultimately necessary for us all. Their lands on the slope above Redwood Creek can probably sustain about 5 million board feet per year. Probably their other holdings including the lands to be acquired from the Purchase Unit will sustain another 5 to 10 million feet. They produced only 15 million feet in 1967, and 17.5 million in 1968 at their Mill B in Orick.

"One sometimes hears it stated that sustained yield can be practiced only on very large forest units. This is untrue, for such practice is possible under suitable conditions on areas of any size down to a single forty-acre subdivision." (16) In any case, they could apply the recommended plan to the 5,000 acre tract we are concerned with, and make money just selling logs.

Georgia-Pacific also will strongly resist any interference with their business quite understandably, but there should be no great technical difficulty in making similar arrangements with them.

Consideration should be given also to the possibility of making similar arrangements with Rellim Redwood Company in the Mill Creek drainage. This whole drainage has been scheduled for acquisition for park purposes by the Save-The-Redwood League for many years, and was favored by a number of knowledgeable people for inclusion in the Redwood National Park.

2. A geological survey should be made to determine the areas of Atwell soil, and areas of underlying parent material condusive to slippage, as proposed by Stone and Associates. This should cover the entire Redwood Creek drainage. The Secretary should then acquire timber and development

rights on the highly unstable lands to prevent any surface use that might accelerate erosion and slippage in these most hazardous areas.

3. On the remaining areas that can be safely logged on slopes adjoining the Park in Redwood Creek, detailed plans should be developed for management and for logging to obtain the following practices:

A. Annual cutting by ownership not to exceed one percent of the volume of virgin timber now standing on each ownership.

B. All logging to be yarded up hill, extending out the full limit of parcticality for such logging with the objective of minimizing the combined amount of soil disturbance in logging and road construction.

C. Logging to be by individual tree selection for redwood, and clearcuts not to exceed one acre in Douglas fir, taking not more than 10 percent of the volume in the cutting area in one cutting cycle.

D. Operators to take all possible precautions to minimize disturbance of soil in road construction, falling, and yarding. Prescriptions must be very detailed and specific for this.

E. Logging to commence at the tops of the ridges, and to progress along the ridges for the entire length of the area before progressing down the slope. Then to proceed by building roads along the slope below the first strip logged, and logging to proceed as before. Logging should proceed in this fashion gradually down the slope, beginning with the gentle ridge-top topography.

In this way, logging can start in a manner least likely to damage park values below, and progress gradually toward the corridor. Meanwhile, as experience is gained improvements can be made in logging techniques. If it should develop that no method can be found for logging these slopes to the satisfaction of both the present owners and the Secretary, then at least a minimum of damage will have been done and other measures can be considered.

REFERENCES

(1) Roy, Douglass F. 1965. Silvical Characteristics of the Coast Redwoods. California Forest and Range Experiment Station, Berkeley, California.

(2) Fritz, Emanuel 1929. Some popular fallacies concerning California Redwoods. Madrono 1:221-223.

(3) As measured by rate of spread. See Fireline Notebook, U.S.D.A., Forest Service Region 5, 1960, Rev. 1963.

(4) Pre-attack planning for Fuel-Breaks in Northern California Timber Area Preliminary Guidelines. U.S.D.A., Forest Service Region 5, 1967.

(5) Guidelines for Fuel-Breaks in Southern California. Fuel-Break Report No. 9, Pacific Southwest Forest and Range Experiment Station, Berkeley, California.

(6) See Soil-vegetation maps 11C-2, 11C-4, 10A-4, 10D-1, U. S. Forest Service, 630 Sansome Street, San Francisco, California, 1961.

(7) Principles of Silviculture, F. S. Baker, McGraw-Hill, New York, 1950, p. 11.

(8) Baker, Frederick S. 1934. Theory and Practice of Silviculture 277-278.

(9) Boyce, J. S. 1961. Forest Pathology. 543-545

(10) Atkinson, William 1967. Proceedings of a conference on Young-growth forest management in California. University of California, Berkeley, California pp. 65-74.

(11) Fritz, Emanuel 1929. Some popular fallacies concerning California Redwoods. Madrono 1:22;-223.

(12) Fritz, Emanuel 1940. Redwood forest management for Utilization. Mech. Eng., 00 859-863.

(13) Boe, Kenneth N. 1963 Tractor-logging costs and production in Old-growth redwood. Pacific Southwest Forest and Range Experiment Station, Berkeley, California

(14) Rostlund, Erhard 1956. A World Geography of Forest Resources pp. 657-665.

(15) Robinson, Gordon P. 1966. Unpublished paper available from Sierra Club, San Francisco, California

(16) Fritz, Emanuel 1929. "Redwood, the Extraordinary." Timberman, 30 (7): 38039, 77.

(17) Mason, David T. 1961. Ad valorem taxation of forest land in Oregon. Paper presented at Yale School of Forestry seminar at Corvallis, Oregon.

(18) Haasis, Ferdinand W 1933. "Shrinkage in a wind-dwarfed redwood." Journal of Forestry 31(4): 407-412.

(19) National Park Service, 1968. Administrative Policies (Natural area category.)

(20) Person, Hubert L., and Hallin, William 1942. "Natural restocking of redwood cutover lands." Journal of Forestry 40(9): 683-688

Appendix H

Statement of Gordon Robinson,

Forestry Consultant,

Sierra Club,

Before the Assembly Committee on Natural Resources

Eureka, California

January 13, 1972

Mr. Chairman:

My name is Gordon Robinson, and I represent the Sierra Club. I reside at 16 Apollo Road, Tiburon, California. I am a professional forester having received my education at the University of California in Berkeley. From 1939 until 1966 I was the principal forester for Southern Pacific Company, 65 Market Street, San Francisco. I set up and managed that company's sustained yield timber management plan on 730,000 acres of forest in northern California. These lands are composed of a variety of forest types, mixed conifer, Douglas fir, Ponderosa pine and true firs. They are being managed under sustained yield for income by selection and group selection systems of silviculture. From 1966 to the present I have been a private forestry consultant and my principal client has been the Sierra Club whom I serve as Staff Forester.

The lands which you came to inspect yesterday are those of three major national business firms: Arcata National Corporation, a Weyerheauser interest; Georgia Pacific Corporation, Weyerheauser's principal competitor; and Simpson Timber Company. You have seen for yourself that the highly destructive logging practices which many citizens have been complaining about in recent years are the deliberate design of major national corporations, not simply the fault of gippo loggers or of ignorant or perhaps careless owners of small tracts of forest land.

The destruction which you have seen has many serious consequences. One result is the rapid runoff of water, causing floods. Another is severe erosion, filling stream channels with silt and spoiling the spawning grounds of fish. There is destruction of natural beauty. These are not matters of small consequence. I am sure you are aware of the recent Grader report indicating an 80 percent decline of steelhead runs in North Coast streams during the past three decades, largely attributable to logging. However, I will limit my discussion to two other results of even greater importance: the immediate economic consequences of these excessive rates of cutting, and the implication of current logging practices to the land itself.

At the present rate, we can foresee only ten years more of lumbering in Humboldt and Del Norte counties. I quote from The Timber Resources of Humboldt County, California by Daniel Oswald, of the Pacific Northwest Forest and Range Experiment Station: "If present cutting levels continue, the county's annual cut can be maintained at the current levels for about 15 years (from January 1967) followed by an abrupt decrease to levels based upon the allowable cut on public forests and sustainable levels of cut on privately owned young growth forests." That was five years ago, and the level of cutting has been pretty well maintained.

Daniel Oswald and Gerald Watson indicated a similar discouraging outlook for Del Norte County.[1] According to them, as of January 1965, there was a total of 3.74 billion board feet of private sawtimber in the county. According to the California State Division of Forestry[2] the average cut

---

[1] Forest Statistics for Del Norte County, California 1965.

[2] State Forest Notes, 1963-1970.

from 1962 to 1969 was .283 billion board feet. This means they had a 13 year supply 7 years ago.

The level of cutting in both counties has been pretty well sustained. It seems therefore quite likely that the abrupt decline will take place about 10 years from now.

The sustained capacity of second growth timber in Humboldt and Del Norte counties combined is about equal to the capacity of the two pulp mills in Eureka. The sustained yield of the national forests available to this area is only about 200 million board feet per year, equivalent to the capacity of two or three medium-sized mills, and about 12 percent of present two-county production. We must conclude therefore that the timber industry has neglected long range concern for the economy of the north coast area.

An even graver situation previals with regard to the effect present clear cut logging practices are having upon the land. The north coast of California is composed of steep unstable soils.

As you observed, in the process of logging, there is massive disturbance of the soil. Dr. Paul Zinke of the U.C. Forestry School has estimated that with prevailing logging practices, 80 percent or more of the ground area logged is distrubed. The resulting loss of soil and nutrients seriously lowers the growth capacity of the land. It endangers the future of our forest industries, and may permanently undermine our whole economy through damage to watershed. There are areas near here that were logged 25 years ago in which the skid trails are still bereft of vegetation and still rapidly eroding. No one knows at this time whether vegetation can recapture those areas or whether a hopeless cycle of

destruction has begun that will not end before the whole area has become a desolate waste. Even if such land can recover this time, there is no assurance it can withstand repetition of such destructive logging.

California now needs a program for the restoration and protection of its forest lands. A realistic and effective program should consist of a combination of requirements and incentives, liberal enough to provide for freedom of the practicing foresters to apply their skills as required to meet the great variety of local situations, yet clear and firm enough to prevent any continuation of present destructive practices. I urge you to consider the following measures:

First: Licensing foresters, which you have already undertaken with AB.2874. The Sierra Club and the Society of American Foresters joined in urging Governor Ronald Reagan to sign this bill, but unfortunately he vetoed it. This bill must be passed.

Second: We need a sustained yield law. I believe the best way to achieve this is to simply require that the State determine which are the commercial forest lands, and to require that each owner file a timber management plan prepared by a licensed forester with the State Division of Forestry within a reasonable period of time. That law should define good forest practices in general terms, and I suggest the following definition:

Good Forest Practices shall consist of:

a) Practicing sustained yield. This means limiting the removal of timber from one's land to that quantity which can be cut annually in perpetuity without a decline in quality. Where timber has already been logged this means restraint in cutting until the forest has been restored to optimum conditions.

b) Practicing a selection system of management wherever consistent with the biological requirements of the forest; and, where this is not the case, keeping the openings no larger than necessary to meet those requirements.

c) Growing timber on long rotations in order to maximize quality and value of forest products. Except for thinning or stand improvement cutting, trees should be allowed to mature before being cut.

d) Maximizing variety of species and ages of trees, because most insects and diseases attack trees of a particular species or age.

e) Taking all the precautions necessary to protect the soil from accelerated erosion and leeching of nutrients. These should include, but not be limited to, standards for design and construction of logging roads, skid trails and landings, and limitations on kind and size of logging equipment.

f) Provision for minimum stream bank protection based on bank slope and logging methods to guarantee actual multiple recreation use of stream bank corridors with stabilized habitat protection for wildlife.

Third: We should revise our tax laws. It is neither fair nor reasonable to require good forest practices on private land unless property taxes on forest land are consistent with those on other property bearing similar net income. It appears on the basis of present studies that we should exempt timber from ad valorum taxes except for that timber cut and removed during the tax year.

Fourth: I believe that water quality standards applicable to water flowing from land after logging should be monitored and enforced. These standards should specify that water not contain more than normal amounts of suspended matter and nutrients.

Fifth: I would like to see the State Legislature pass a resolution asking Congress to amend the Internal Revenue Code in two respects:

a) To regard investments in forestry as operating expenses rather than capital investments.

b) Requiring timber operators and timber land owners to earn their capital gains by practicing a high level of sustained yield forestry.

In 1943, Congress extended the capital gains provision of the Internal Revenue Code to timber as a means of stimulating private forestry. It was argued that this measure was necessary to provide an adequate rate of return on capital investments, which in forestry must be held for many years.

While a few responsible firms continue to manage their forests for a permanent high level of production, the provision has generally had an effect opposite to what was intended. Shortly after its passage investors entered the forest industry field to make quick profits under capital gains. Foreseeing a decline in the timber supply and rising stumpage prices, they bought up firms with major holdings of virgin timber. Then they stepped up lumber production and liquidation of old growth. Often they sell timber or logs to small firms who, having cut all their own timber and written off

their capital investments,can pay extremely high prices, poised to go out of business the moment it becomes unprofitable. Timber hungry firms also bid up prices on the national forests. The spread between stumpage values thus established and their original purchase price is subject to capital gains. In this way the investors maximize income subject to the favorable tax rate, but failed to adopt the sustained yield management plans hoped for by supporters of the legislation.

It is desirable to provide incentives of a financial nature to promote the public good through private enterprise, but to be successful they must be supported with appropriate requirements. Capital gains on timber is not so supported.

Appendix I

Probably the best statement I made to any congressional committee on behalf of the Sierra Club was in April 1971 before the Senate Interior committee on clearcutting. The famous report by the University of Montana criticizing the management of the national forests led Senator Metcalf and Frank Church to schedule these hearings. Of course a number of us had been pressuring Congress on this for some time. Anyway, my part was to round up experts in various specialized fields who would go to Washington and testify as to the principles of forest management required to meet the standards in their area of expertise. I had in mind soil scientists, wildlife biologists, ornithologists, fish biologists, forest ecologists, botanists, etc. My hope was that the hearing record would become a textbook of multiple-use forestry. We didn't quite make it because a number of the people I contacted were afraid to have their testimony made public. Some people sent reports to the committee, asking that it not be printed in the Hearings Record. It came out pretty well at that.

Gordon Robinson 1979

STATEMENT OF GORDON ROBINSON

Before the Senate Committee on Interior and Insular Affairs

Washington, D.C. April 5-6-7, 1971

Mr. Chairman: My name is Gordon Robinson. I reside at 16 Apollo Road, Tiburon, California. I am a professional forester having received my education at the University of California in Berkeley. From 1939 until 1966 I was the principal forester for Southern Pacific Company, 65 Market Street, San Francisco. I set up and managed that company's substained yield timber management plan on 730,000 acres of forest in northern California. These lands are composed of a variety of forest types, mixed conifer, Douglas fir, Ponderosa pine and true firs. They are being managed for income under selection and group selection systems of silviculture. From 1966 to the present I have been a private forestry consultant and my principal client has been the Sierra Club whom I serve as Staff Forester. In a narrow sense I am representing the Sierra Club in my presentation. The Sierra Club has made it possible for me to do the research to document supporting evidence in my efforts to improve forestry in the United States. In a broader sense I represent a very large number of professional foresters who have been on the verge of despair for many years.

THE PROBLEM

Declining quality of our forest resources

The best kept secret in this period of great concern about the

declining quality of our environment is the condition of our forest lands. Concern for our forests was the beginning of American conservation. Forests are the source of the bulk of our water, the home of our wildlife, the scene of most of our recreation, and the resource base of one of our largest and oldest industries. Yet, the forests of America have been relentlessly plundered ever since Europeans invaded the western hemisphere 500 years ago. The destruction continues almost unabated today despite the contrary impression many people seem to have inferred from slick nationally circulated tree farm propaganda. Nevertheless, during the past twenty years forest industries through their many and varied lobbying organizations have been vigorously campaigning both thru administrative and legislative channels to require the United States Forest Service and the Bureau of Land Management to vastly increase the sale of timber from our public forests. The reasons they are giving now are that we have a critical housing shortage requiring low cost housing which in turn ostensibly requires increasing quantities of wood. The private forests, they say, are gone and the only way we can meet the environmental crisis is to cut more timber from our national forests. If they had actually practiced forestry on their own land instead of pretending they would not be fighting for our public timber. Actually however, the amount of timber cut annually in the United States has been roughly constant since 1900 and if prices are allowed to seek their natural level there is no reason to expect any great rise in the use of wood in the foreseeable future except possibly for pulp and that increase while of doubtful social value can be easily met by the

shoddy forestry being practiced in the South.

Wood famine calls for corrective measures

Industries recent and continuing campaign for a National Timber Supply Act is evidence that the wood famine long predicted in this country has finally come to pass. Even worse is the revelation during the hearings on that proposal that over the last two decades the Forest Service has been yielding to this pressure by greatly increasing the sale of timber and is now grossly mismanaging the national forests. A parallel situation exists with respect to the Bureau of Land Management lands in western Oregon. It is very late to be taking corrective measures but hopefully there is still time.

To practice good forestry is a reasonable expectation of the guardians of this natural resource.

We must promptly restore the Forest Service and the Bureau of Land Management to their proper rule of managing our federal forests under multiple use and sustained yield, and we must immediately enact effective legislation requiring good forestry on private lands.

Multiple use

In order to cope with the situation effectively, it is important to clearly understand what good forestry consists of. Where good forestry is practiced the land usually offers a satisfactory aesthetic

experience to the visitor. It consists of limiting the cutting of timber to that which can be removed annually in perpetuity. It consists of practicing a selection system of cutting wherever this is consistent with the biological requirements of the species involved, and where this is not the case, keeping the openings no larger than necessary to meet those requirements. Finally, it consists of taking extreme precaution to protect the soil, our all-important basic resource. This is multiple-use forestry, the management of timber in ways compatible with watershed, wildlife, range and recreation. And this is what foresters had in mind when they offered "multiple use" as a slogan to describe the policies of the U.S. Forest Service. There is no question whatsoever about this definition of good forestry, and the advantages of such management are overwhelming.

Advantages of mixed all-age stands

It takes timber to grow timber. It is not enough to have orderly fields of young trees varying in age from patch to patch. In looking at a well-managed forest one will observe that it is fully stocked with trees of all sizes and ages. It will be obvious that the land is growing about all the timber it can, and that most of the growth consists of high quality, highly valuable material in the lower portions of the large older trees. It will be evident that no erosion is taking place. Roads will be stable and attractive, having the appearance of being lain on the land rather than cut into it. The soil will be intact; the forest floor will be covered with leaf litter and other vegetative matter in various stages of growth or decomposition. This absorbent layer holds

rain and melting snow while it soaks down into the ground through animal burrows, pores such as worm holes, channels dug by ants, and tracks left by the decaying roots of past generations of vegetation. In this way the forest becomes a vast reservoir of water which gradually seeps down through the land and comes out in springs, in the form of clear cool water. This is how the forest stabilizes stream flow, and this is what is referred to when one reads of the forest serving to protect our watersheds. One also observes in the well-managed forest that there are frequent small openings stocked with herbs and browse which serve as food and shelter for wildlife. Finally one observes that such a forest maintains its beauty and will continue to serve the recreational needs of most people as long as it is so managed.

"Multiple use" now a mere slogan

This, however, is not the way our federal forests are being managed today. The annual cut of timber on our national forests has been increased from 5.6-billion feet in 1950 to over 14.8-billion feet in 1969. Likewise, the Bureau of Land Management has increased the allowable cut on the O&C and other Interior department lands in western Oregon twelve times since 1937 climbing relentlessly from an initial

500-million board feet to 1,170 million board feet in 1970, with actual sales escalating as high as 1,708 million board feet in 1970. The first revision downward is now being considered but that, altho insufficient, is meeting with stiff resistance from industry. These increases have not been earned through improved forest practices or enhanced growth but rather have been achieved through application of a long dismal series of rationalizations invented to justify appeasement of the timber industry and to obtain increasing appropriations from Congress.

FALSE JUSTIFICATIONS FOR EXCESSIVE LOGGING

Re-classifying forest lands

I have not traced the history of the rationalizations used by the Bureau of Land Management, and have studied only their present proposal. Referring to the Forest Service however, one of the rationalizations is the continuous shifting of criteria for classification of forest lands. In 1928 Congress passed the McSweney-McNary Act which with subsequent amendments gave the Forest Service responsibility for periodically measuring the forest resources of the United States. The first survey under the Act published in 1945, indicated a total of 73 million acres of commercial forest land in the national forests within the 48 contiguous states. However, the second such inventory published in 1953 and known as the Timber Resources Review indicated a total of 81 million acres of commercial forest land, and the 1963 inventory published under the title of Timber Trends shows 91.5 million

acres of such land. The reported increase does not reflect any change in the area of our national forests. That has comprised a total of 186 million acres throughout the entire period of these surveys except for minor variations due to acquisitions, exchanges and withdrawals for parks and wilderness areas. The 18 million acre increase is the result of reclassification of forest from non-commercial to commercial. This consists of land formerly classified as protection forest and managed for watershed, wildlife, and recreation. For example, they recently changed the definition of commercial forest land from "...land capable of producing 25 cubic feet of wood annually," to "...land capable of producing 20 cubic feet..."

Consequently some of the increase in the volume of national forest annual timber sales consists of marginal species of timber growing on steep unstable soils, scattered stands, and timber that has taken a very long time to grow becuase of poor conditions such as thin rocky soil, dry climate or short growing season.

Combining working circles

Another way in which the cut has been increased on the national forests has been by combining the working circles. A working circle is a compact administrative unit within which the forester balances cut and growth. It is readily comprehensible to a forester in terms of its condition, its quantity and quality of timber, and its capacity for growth. Its various management considerations such as watershed, wildlife and recreational values are also clear and comprehensible.

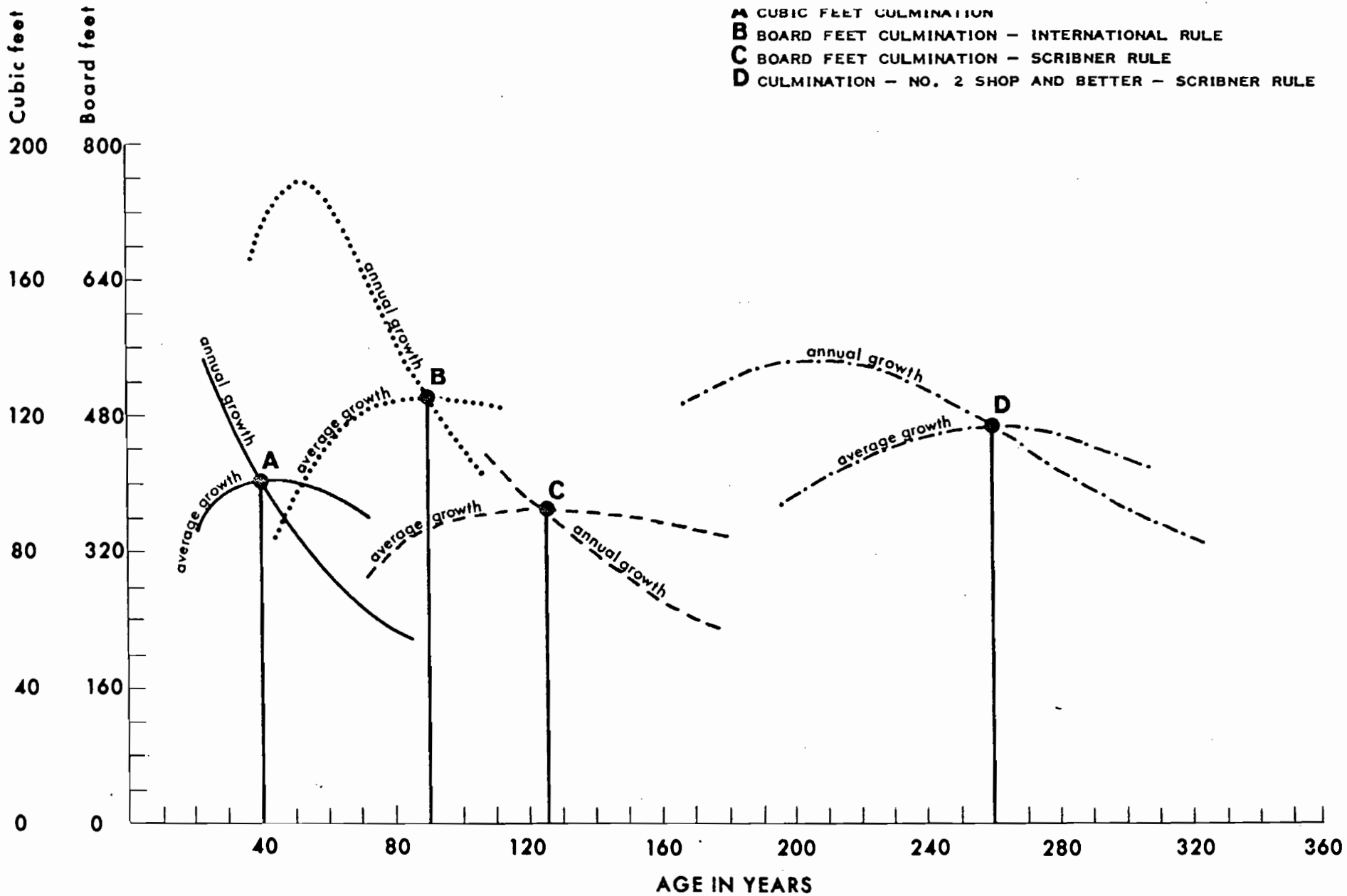
In recent years, however, these units have been merged so that now throughout the United States many national forests as a whole are regarded as a single working circle. This has several destructive results. Forest statistics are gathered by sampling techniques, and the people who collect the data do not see the results of their work. Data is forwarded to a computer center where it is processed and delivered to others than those who did the sampling. Consequently some of the most important management decisions are made by people who are not directly familiar with the forest. Basic decisions of how much timber to sell, and what timber to sell have come to be made on the basis of rules and regulations emanating from Washington and depending upon data processing print outs. In this manner the practising forester has generally lost touch, and the forests are run by people high in the bureaucratic echelons who are closer to industry than they are to the living forests they control. Thus it is that scattered timber and timber on steep unstable soils, while showing up in the inventory, is not recognized for what it is by the people making the management decisions. So again, allowable cuts are increased in readily accessible high quality timber on the strength of inaccessible timber and timber growing on steep unstable slopes, all brought about by gerrymandering the working circles.

Another destructive effect of combining working circles grows out of the fact that allowable cuts are calculated from forests statistics applying to each working circle as a whole. This means that the Forest Service cannot reserve any de facto wilderness for possible wilderness classification without reducing the allowable cut, thereby bringing the

whole timber lobby into action every time the question is raised about saving some particularly beautiful and fragile area not already included in a wilderness or Primitive area. This is what led to the famous Parker case in Colorado and is a major cause of the great conflict between the lumber industry and conservationists through the country.

Shortening rotations

Rotation is a technical term used by foresters to describe the length of time it takes to grow a tree from logging until the next generation is cut. This is the age of the tree plus a period of time allowed for regeneration. One way of determining a rotation is to superimpose a pair of graphs; one showing the current growth by year and the other showing the average growth through each year of age. Where these two curves cross is the point of diminishing returns. That point may be described as the age of the forest at which the annual average growth begins to decline. Under even age management it is the age at which long-run production would be maximized if you were to clear cut and start over again. Now, the interesting thing is that indicated rotations vary greatly with the unit of measurement used for making these determinations. (see graph) To illustrate, if you use cubic foot content of the entire tree, this technique will indicate a rotation age of 40 years on an average Ponderosa pine site. If, however, you use board feet International sawlog rule instead of cubic feet, which is a way of measuring growth in sawlog sizes; a rotation of 90 years will be indicated. Then again, using Scribner rule for



TREE ROTATIONS IN PONDEROSA PINE (SITE 100)

(A, B, AND C FROM YIELD OF EVEN-AGED STANDS OF PONDEROSA PINE. WALTER H. MEYER. D FROM ECONOMIC SIGNIFIANCE OF TREE SIZE IN WESTERN SIERRA LUMBERING. BRUNDAGE, KREUGER, DUNNING. UNIVERSITY OF CALIFORNIA.

determining optimum board foot rotations you get about 125 years, because that rule emphasizes quality slightly by underestimating the quantity of lumber that can be cut from very small low quality logs. (The "rules" referred to are tables indicating the contents of logs of various sizes.) Finally, if you take quality into consideration by plotting value determinations rather than quantities, or perhaps by using board feet of clear lumber rather than total board feet, you get a rotation in the neighborhood of 260 years. The Forest Service in originally establishing management plans were either using long rotations, or were practising a selection system of management in which such determinations were mere guides for helping decide what volume of timber to sell rather than justification for clear-cutting and starting over. But now they are practicing even-age management (clear-cutting) in every kind of forest I know of, and are basing their plans on the shortest board-feet rotations that can be calculated. They are even considering the possibility of going all the way and using cubic foot rotations. Rotations calculated to maximize pulp production are already being used on some national forests!

This is an important point and I wish to clarify it by an illustration. Suppose we have a perfectly-managed even-age forest consisting of a complete distribution of age classes and being managed on a 100-year rotation. This would consist of one acre which is fallow having just been logged; one acre with seedlings following last-year's logging, and so on until we have one acre now 100 years old which we will cut this year. In this example the sustained yield and the allowable cut are the same, and they consist of the volume of timber that this land produces in 100

years on one acre. Now let us suppose the manager suddenly decides to shorten the rotation to 50 years. Henceforth he will cut 2 acres a year instead of one under the old plan. So now this year he cuts 2 acres, one with 99 year's growth and one with 100 year's growth. Next year he cuts one acre with 98 year's growth and one with 99 and so on until finally after fifty years he has again a substained yield under evenflow, but at a volume somewhere around half of what he is cutting today. He has increased his allowable cut, and is still practicing sustained yield but at a lower level of management. He could also calculate an amount that could be cut constantly under so-called even-flow for the next fifty years, to be followed by a sudden decline.

This bit of deceptive logic is called even-flow sustained yield, and is being used intensively by both the Forest Service and the Bureau of Land Management.

Clearcutting

Switching from a selection system of management as described earlier under good forestry to a plan of clear-cutting and growing timber in even age stands, is yet another justification for increasing the cut. This was a subject of great debate in the Douglas fir region during the 1940's. Throughout that region which is (or at least was) the most heavily timbered portion of our whole national forest system, the Forest Service is now cutting at least 50 per cent in excess of that quantity of timber that can be sustained. In the Douglas Fir Supply Study published in 1969 they reported on several management alternatives that had been considered. The startling thing is that they did not even

consider the alternative of limiting their cut to that quantity which can be continuously sustained. All of their alternatives require cutting at least 50 percent in excess of the sustained yield capacity throughout the first cutting cycle, and for technical reasons there is even serious doubt they are even that close to balancing their resource budget.

It is recommended that the Committee obtain copies of the Douglas Fir Supply Study from the Forest Service. You will find therein a series of tables and charts showing the volumes of timber being cut now, and the volumes to be cut in the future under a variety of plans. All of the plans indicate an abrupt decline after the first cutting cycle.

In a forest managed so as to maintain a mixture of species and ages of trees such as we usually have in our virgin forests, there will be many trees beyond rotation age. If we practice a selection systems of management from the very start in such forests, we have the luxury of being able to keep the forest fully stocked and producing high qualtiy material without seriously disturbing other values of watershed, wildlife and recreation. This involves permanently carrying an inventory of timber beyond rotation age. However, this inventory is not wasted, on the contrary it provides insurance against errors of judgement in determining allowable cuts. It provides insurance against fire, insects, and disease. It holds open the option of using prescribed burning to secure natural regeneration.

The trouble with clear cutting

Switching to even-age management on the other hand, sacrifices this inventory of high quality material, introduces many hazards such as fire, insects, and diseases, and abandons multiple use. It provides a justification for temporary accelerated cutting, but it introduces many undesirable factors.

Clear-cutting causes rapid runoff of water, thus upsetting the watershed values of the forest. It causes accelerated soil erosion, and the leeching of important soil nutrients thus reducing productivity.

It introduces difficulties in obtaining reproduction, and favors development of competing vegetation which all too often leads to widespread use of persistent chemical defoliants having unknown secondary effects on other forms of life. On steep slopes it frequently causes land slides, a matter of enormous concern in the Pacific Coast and Alaska.

The numbers game

In the Douglas fir region both the Forest Service and the Bureau of Land Management are selling timber under one standard of measurement, while computing future yields under another. The minimum sized tree figured in the present inventories of standing timber measures 12 inches in diameter and over, and its volume is calculated to an 8 inch diameter at the tree top. In the case of the Bureau of Land Management, where sales are made for clear cutting within specified areas for a fixed sum of money, trees below that size are obviously included in the sale, but are not included in the record. However, estimates of future yields, for calculating allowable cuts, include trees measuring 7 inches in diameter measured to a 5 inch top. The difference in volume between these two standards of measurement in a second growth stand will be about 40 percent of the total. In other words, about 40 percent of the volume of timber in an even-aged stand at rotation age is in trees below 12 inches in diameter and in tops measuring between 5 and 8 inches in diameter. So, while the BLM says they are selling timber in annual amounts that will

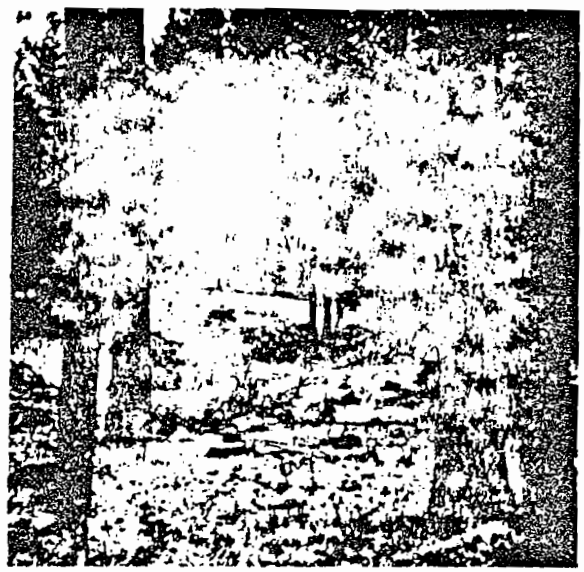
never decline, there will actually be a decline of as much as 40 percent in their sustained yield following liquidation of present forests, resulting from this sleight-of-hand alone. The Forest Service makes use of the same rationalization, but in a manner that is much more involved.

Intensive Forestry

There are many more rationalizations used to increase the amount of timber now being cut at the expense of multiple use management. Most are too technical for this statement. I will describe just one more, one that has caused particular concern to people in the Northern Rocky Mountain area. The Forest Service is immediately increasing the cut of old growth timber on the strength of estimated growth rates applicable to plantations and the like, without waiting for the growth to actually occur. They subsidize sale of submarginal timber in areas such as shown in picture A by constructing timber access roads with funds appropriated by Congress. Such land is then terraced and planted as in picture C. Let us say for example that there are 1,000 acres treated this way, and it is estimated the plantation will grow 100 board feet per acre per year on the average for 140 years, or until the trees are of sawlog size. This would add 100,000 board feet to the annual allowable cut for the National Forest at the time of the first revision of their timber management plan after planting.

The additional computed cut will then be taken from prime timber elsewhere, such as shown in B, until the planted trees are large enough to cut -- or as long as the prime timber lasts. The increased cut, in prime areas formerly logged selectively, is taken in the form of "overstory removal" such as shown in picture D.

A THIS AREA IN THE SHOSHONE NATIONAL FOREST, WYOMING, IS PROPOSED BY CONSERVATION GROUPS FOR INCLUSION IN THE WASHAKIE WILDERNESS.
(PHOTO BY FRANCIS WALCOTT)



B THIS SELECTIVELY MANAGED PART OF THE BITTERROOT NATIONAL FOREST, MONTANA, HAS BEEN LOGGED THREE TIMES SINCE 190
(PHOTO BY GORDON ROBINSON)

C THIS SUB-ALPINE AREA IN THE BITTERROOT NATIONAL FOREST, MONTANA, USED TO BE MANAGED FOR WATERSHED AND RECREATION. THE FOREST SERVICE IS NOW SUBSIDIZING LOGGING OF THIS SUB-MARGINAL TIMBER ON THESE STEEP UNSTABLE SOILS.
(PHOTO BY GORDON ROBINSON)

D THE HEAVY LOGGING SHOWN IN THIS AREA OF THE BITTERROOT NATIONAL FOREST IS TERMED "OVERSTORY REMOVAL." IT IS OBVIOUS THAT THERE IS LITTLE REGARD FOR MULTIPLE USE WITH THIS TYPE OF TIMBER CUTTING.
(PHOTO BY GORDON ROBINSON)

Thus the Forest Service takes land as in A, treats it as in C, which is used to justify logging as in D, on land formerly managed for multiple use under sustained yield as in B.

CONCLUSION

Forestry is immensely complex. There are legitimate differences in opinion among foresters on most of the points I have raised. The trouble is that all of the specific decisions involved in determining allowable cuts are coming down on the side favoring increases in the rate of cutting. This is not legitimate, and this is the root of our problem.

The results of all these rationalizations are to be found in the flood of complaints you are receiving from all over the nation. The seriousness of the situation can perhaps best be exemplified by the absurd state of affairs that has developed in Alaska.

The Tongass National Forest recently issued a contract to U.S. Plywood-Champion Papers, Inc. calling for sale of 8.75 billion feet of timber to be cut in a 50 year period from over a million acres. In one of three sale areas described in that contract, known as the Yakatat Working Circle, they appear to have sold more commercial timber than actually exists, while claiming to be practicing sustained yield on a 120 year rotation. Details are related in the appendix.

A similar situation exists in the long term Ketchikan Pulp Company allotment where only 5.0 billion feet of merchantable timber is available out of 8.25 billion contracted for from the Forest Service.

If the U.S. Plywood contract is allowed to stand the experience will undoubtedly be similar to what happened with the Alaska Lumber and Pulp Company's 50 year contract where Purchasers find only 12½ percent of the timber the Forest Service sold to them is actually available. A joint survey conducted by Alaska Lumber and Pulp, and the Forest Service in 1968 indicates the Forest Service overestimated the accessible commercial timber in that allotment by a monumental seven hundred

and ninety percent (797%), and that allotment represents more than 10 percent of the entire allowable cut in the Alaska Region!

More appaling than these oversights is the devastation of the ecological balance of these areas. Fish and game habitat are destroyed. Soil erosion and landslides become prevalent accompanied by lowering timber growing potential. Clearcut areas have lost their recreational values for many years to come. The problems of future supplies of timber, as well as space for non-consumptive recreation are further compounded. The conflict between forest industries and citizens seeking wholesome outdoor experience will continue to escalate as long as present practices continue.

RECOMMENDATIONS

1

Clearly, a full scale Congressional investigation of timber management practices on the public forest lands is urgently required. The Forest Service and the Bureau of Land Management are violating the public trust by ignoring the spirit of the acts requiring multiple use. They have succumbed to the demands of industry at the expense of good forestry practices. It is vitally important that the Agencies' practices be re-evaluated and programs be developed that insure the genuine practice of multiple use under sustained yield. Cutting rates should be reduced to quantities that can be sustained without reduction in quality of either the timber sold or the other uses of the forests.

2

All marginal and submarginal forest lands under jurisdiction of the Forest Service and the Bureau of Land Management should be immediately withdrawn from all forms of development to protect watershed, wildlife, and recreation. These lands must be withdrawn from the cate-

gory of "commercial forest land."

3

A moritorium should be promptly ordered on sales of public timber in all administrative units having a three year backlog of sales in effect. Administrative units lacking such backlog should be permitted to make only sales specifying a conservative system of selective logging. Congress would thereby have two years to make its investigation, and the Agencies would have a year after that to implement new directives of Congress, which should require excellent forestry on our public commercial forest lands.

4

Congress should firmly resist all attempts from industry and the Agencies to finance timber management out of timber sale receipts, such as was attempted in the recently defeated Timber Supply Bill. Such funding encourages escalation of sales to obtain appropriations.

* * * * * * * * * *

Appendix J

COMMENT on the Final ENVIRONMENTAL STATEMENT on the PERENOSA TIMBER SALE, AFOGNAK ISLAND, ALASKA

by Gordon Robinson
October 28, 1974

At the request of Jack Hession for the Alaska Chapter of the Sierra Club and the Alaska Conservation Society, I have made a review of the Environmental Statement on the Perenosa Timber Sale in the Chugach National Forest. I spent from September 1 to 7, at Kodiak where I visited with Gordon Edgars, the District Ranger several times and from where I visited Afognak Island. I examined regeneration within the Army clearcut on Danger Bay. I examined old growth timber and regeneration following loss of timber from insects between Paul Lake and Laura Lake. I examined timber around Portage Lake particularly at the south end where we have typical advancing forest-grassland encounter. I examined logging and regeneration along Raspberry Strait from Anadell to the present logging. I have flown over most of Afognak at a low elevation obtaining a good indication of the dispersion of timber stands and the phenomena of timber invading grassland and muskeg following retreat of glaciation. I have studied documents and publications relevant to this timber sale.

The environmental impact report is required under the National Environmental Policy Act which went into effect

January 1, 1970. It appears to me that this environmental statement is primarily an attempt to justify the Perenosa Sale which was awarded June 4, 1968, four years prior to the Act.

The Forest Service hopes to gain acceptance of this contract by making it appear that drastic changes have been made for environmental reasons. Actually, however, very little change appears to have been made. The original contract calls for removal of 525 million board feet by means of clearcutting at the rate of 35 million board feet per year for 15 years. The purchasers did not cut any timber during the first 5 years of the contract, however. So the Forest Service now proposes a revision under which the purchasers would cut 332 million board feet by clearcutting at the rate of 35 million board feet per year for 10 years. The important differences between the original and the proposed revised sale are these: (1) the stumpage price is being arbitrarily reduced, (2) the clearcuts are somewhat smaller during the initial logging and (3) a small area containing about 18 million board feet has been reserved from logging as an Elk wintering area. The Environmental Statement does not contain a copy of the proposed revised contract. This is a serious defect in the Statement which makes it impossible to judge exactly what reconsideration of environmental factors has actually been undertaken.

The third paragraph in Section VI, on page 49 indicates that the Forest Service intends to sell timber from this island at about the present rate continuously as long as the timber supply holds out. The present sale does not obligate the Forest Service to continue making sales at the present rate, but if carried out it would certainly make it very difficult for them to reduce the rate of logging once manufacturing facilities have been established to accommodate this magnitude of annual cut.

However, the Internal Revenue code permits amortization of logging equipment over a six-year period and of a sawmill over a ten-year period.

My principle objection to this timber sale is that it is based upon a timber management plan calling for a grossly excessive allowable cut and that it calls for clearcutting against repeated recommendations of Forest Service personal to the contrary. I do not believe there is sufficient timber or timber growing capacity on Afognak to continue selling timber at the rate of 30-35 million board feet per year without nearly denuding the island and without very seriously damaging the other multiple-use values, principally the Kodiak bear population, and the salmon spawning capacity. My reasons for this conclusion are as follows:

1. Inadequate allowance for withdrawals for multiple-use purposes. The Alaska Department of Fish and Game has

painstakingly identified areas on Afognak Island which are important fish producing lakes and streams, elk and deer winter range, brown bear spring and fall range, bird and sea mammal rookery, juvenile crab rearing areas and eagle nesting sites. These I presume are accurately indicated on Map D opposite page 24 of the Impact Statement. While I believe the Department of Fish and Game should be contacted to assure adequacy of Map D, it seems clear to me that while these important areas have been identified, they have not been withdrawn. Map B, showing the location of proposed clearcuts for the second and third five-year periods of the Perenosa contract frequently overlap areas identified on Map D as being important for wildlife purposes. Furthermore, the third paragraph under Section VI on page 50 indicates that the Forest Service has every intention of continuing to sell timber at the present rate of harvest or approximately that same rate continuously. This cannot be done without clearcutting the areas identified on Map D so rapidly that they can no longer serve the purposes for which they have been identified.

2. <u>The resource base used for calculating the allowable cuts includes inoperable timber</u>. The allowable cut for Afognak is calculated on page CA 17, of the Timber Management Plan. Working Group I consists of the operable timber within the general forest and prime habitat zones. The figure 4,189 million board feet is taken from table 14A of Forest

Statistics for the Chugach Working Circle. The allowable cut is determined by dividing that figure by the rotation and adding the estimated annual growth of young growth timber. The resulting figure is then adjusted to reflect the results of an area volume check shown on page CA-16 of the Timber Management Plan. (This adjustment is inappropriate, See Note 1, page A-1 of this report.)

The 4,189 million feet is erroneous because it includes inoperable timber. Forest Statistics on page 41 lists guides to operability. The minimum operable volume per acre is 16 M (thousand board feet) per acre net water scale, according to these criteria. According to the final paragraph on page C-3 of the Timber Management Plan, the 16 M feet per acre must be adjusted by a factor of 1.32 to convert it to inventory scale. Thus the minimum operable volume per acre is 21 M board feet inventory scale. There are other criteria for determining operability which would further restrict the amount of timber in the inventory which should be used in their allowable cut calculation. Ignoring those, however, and using the minimum figure of 21 M, I find that only 2,448 million board feet of the old growth timber, and only 405 million feet of the young growth is operable. Therefore the figure in the allowable cut calculation should be a total of these two or 2,853, instead of 4,189. When we correct for this error we have an allowable cut of 23.5 million board feet.

I attempted to work out this correction factor directly from plot summary data, but the Forest Service would not allow me to have it. The District Ranger said I would have to get it in Anchorage. The Supervisor in Anchorage referred me to Juneau. Lloyd Olson in Juneau told me their plot data is not public information and that under the Public Information Act they are not required to give it to me and therefore I could not have it. While in Juneau I submitted my request in writing, but have received only an evasive reply. In my effort to obtain this information I advised several high officials in the Regional office that I had made a special trip to Juneau to get this information and to level with them in hope in avoiding a conflict. I pointed out that it was not unlikely their figures would substantiate their own allowable cut calculation and we would have no disagreement on that point. But their refusal to provide the information, I considered to be information in itself. The only conclusion I could draw was that disclosure of their plot summary data would be embarrassing. (The above correction is based upon calculations working back from statistics on page 48 of Forest Statistics for the Chugach Working Circle. Having the coefficient of variation of their plot data, both for young growth and old growth makes it possible to determine the probable percentage of timber in their inventory which is below 21 thousand board feet per acre.)

3. Inadequate allowance for time required for regeneration. It has been long known that regeneration is

difficult to obtain upon Afognak Island. The Timber Management Plan of 1967 makes note of this fact on page C-13:

"A regeneration problem on old cuttings on Afognak Island, long thought to be animal damage, has been diagnosed as a primarily fertility problem."

In the multiple-use survey report of the Perenosa Timber Sale, F. R. Stevens, Soils Scientist, reported July 5, 1966, with regard to the Army clearcut on Danger Bay: "The spruce stands in the clearcut area are quite open, with many brushy openings of various sizes. The young stands in the clearcut seem to have come back in a similar manner. Much dense grass and brush is in the clearcut, however, as most of the 20-year old trees are less than 6 feet tall, and except for the denser clumps have not formed a closed canopy ... The average dominant and co-dominant trees are less than 6 feet tall at over twenty years of age ... The major reason for the slow growth rate appears to be soil fertility."

F. R. Stevens, in another memorandum dated October 25, 1967, says: "In the Discovery Bay area are many rotten logs and snags that are the result of an insect kill in the early 1930's." (Administrative study, estimating yields of timber stands of the Cordova Working Circle, Region 10 - 1960.) This report states that there was very little regeneration in the openings left by the dead trees. Now, however, many young

trees have become established on the rotten logs and stumps resulting from the mortality." It appears that at least 30 years is necessary to decay logs to the state where they make favorable seed beds" .... "For maximum regeneration and minimum erosion, I (F. R. Stevens) recommend that the timber sale be laid out to: (1) protect and preserve as much of the surface organic matter layer as possible. On the Raspberry Strait and Danger Bay cuttings, areas of exposed mineral soil came back to a dense grass cover which greatly retarded regeneration, (2) preserve and protect as much of the advanced regeneration as possible, (3) leave as much standing green timber as possible. The older Raspberry Straits sale where much residual timber was left had the densest regeneration of any Afognak Island cutting I have seen. Shading by the residual stand has evidently discouraged grass competition and allowed much denser regeneration. Diameter growth of one residual tree in the Danger Bay cutting jumped from practically nothing to 3-rings per inch after cutting, so it appears that residual trees will respond to release. Blowdown has not been observed to be much of a problem on Afognak. A shelter-wood type cutting, if feasible appears to be the best means of harvesting to encourage regeneration." He then says, "I am sure that unless something can be done to speed the growth of post-logging stands, the sustained yield calculated for Afognak Island is much too high. The assumption that post-logging stands will grow as fast as the present stand

did is wrong in the case of Afognak. The present commercial timber stands in the proposed sale area have grown at a rate of Site Index 80 or more. Regeneration on the Danger Bay cutting is growing at a rate of Site Index 40 or less. This rate cannot be considered as commercial forest land. The vast area of scrub (non-commercial) forest land in south-east Alaska is mostly Site Index 60 to 80."

My own observation of regeneration on Afognak Island is that young growth is sparce indeed in the Army clearcut on Danger Bay as reported by Stevens and Harris. Typically trees are growing about 2 to 3 inches per year in height up to eye level or for the first 25-30 years. I found almost identical slow growth in openings created near Paul Lake by an insect epidemic in the 1930's. I found the same thing again near Raspberry Straits. There however, the site appeared to be better on the north slopes, but regeneration was still very sparse. My findings agree with those of Mr. Stevens in that the only real good regeneration was in the partial logging where the first cutting was done along Raspberry Straits in the 1940's. I also observed throughout all of these areas examined that most of the regeneration is growing on decayed wood.

Gregory and Laurent indicated in their report of 1960 entitled Estimating Yield of Timber Stands on the Cordova Working Circle that Afognak Island is Site 67 and that there was virtually no reproduction in the 1943 Army cut over in Afognak Bay; that there was very little reproduction in the

openings left by trees killed in the insect epidemic of the 1930's; and finally that tree height growth on Afognak Island is very similar to that shown in Yield Table in Technical Bulletins 412 and 544 - implying that those tables are satisfactory for Yield Prediction, if properly applied.

I have reviewed Natural Reforestation After Logging on Afognak Island, by A. S. Harris, May, 1972. He reports that the growth rate of dominant spruce seedlings in the clearcut at Danger Bay was slow and only 30% of the plots he examined contain spruce seedlings at least 4.5 feet tall after 25 years. He says that slow growing seedlings may eventually mature, but it is doubtful that many of those overtopped by dense vegetation or growing slowly for other reasons will develop into merchantable trees at the anticipated stand rotation age of 110 years. He reports also that 66% of the seedlings grew on rotten wood, upturned roots or alongside stumps. He suggested that shelterwood cutting may prove to be an appropriate silvicultural system for use on Afognak Island. He cited research by Ruth, 1965 to show that interest in shelterwood cutting is being shown in Oregon as a means of reducing competition for young spruce and hemlock. He concluded that until more experience with reforestation is available forest managers should proceed cautiously with plans for large scale timber harvesting on Afognak Island.

A possible explanation of spruce regenerating mainly on rotten wood is suggested by Seidler, et al. Seidler reports that decay fungi are associated with nitrogen fixing bacteria. This may answer the question that has bothered foresters for many years as to why spruce regenerate so well on rotten wood, while wood is known to contain very little nitrogen itself. It seems probable that Afognak has sterile soil gradually accumulating nutrients from the build=up of biomass for the last few thousand years. My guess is that the nitrogen necessary for regeneration of spruce is available mainly in the decaying wood and is made available through the organisms associated with wood decay. Spruce seedlings grow very slowly for the first 25-40 years until their roots are well into the earth and the trees begin feeding on their own leaf litter. At that point their growth probably excelerates as they recycle their own nutrients. However one looks at it, everyone examining soils and regeneration on Afognak seems to agree that regeneration grows very slowly and that a considerable period of time must be allowed for regeneration in timber management planning. Stevens suggests 30 years for the decay of wood - also, a rate of growth which has been measured on regenerated stands indicates that we should possibly add another 25 years for slow early growth.

If we recalculate the allowable cut - using 50 years for regeneration therefore, instead of 10 as was done in the

calculation on page CA-17 of the Timber Management Plan, and if we use only the operable timber as defined in Statistics for Chugach Working Circle we derive an allowable cut of 17.5 million board feet.

4. The rotation is too short to allow for a sustained yield of merchantable timber by present standards. The timber sale contract with purchasers of the Afognak sale specifies that the minimum merchantable tree is 12 inches in diameter, breast height. This is standard for the Chugach National Forest. Yet from the Yield Table used for determining the allowable cut we find that fully 2/3 of the volume at rotation age, that is of trees of 100 years of age, will be below 12 inches in diameter. Therefore, on the basis of Yield Table alone, disregarding regeneration problems, their plan is a distortion of sustained yield. An honest sustained yield calculation must anticipate achievement and maintenance in perpetuity of a high level annual or regular periodic output of timber, according to the Sustained Yield Multiple-Use Act of 1960. Rotation is generally determined by computing the culmination of mean annual increment. This means the age at which the average annual growth begins to decline. According to Table 30 on page 47 of Technical Bulletin 544, yield of even-age stands of Sitka Spruce, mean annual increment of trees 12 inches in diameter and over does not culminate on Site 60 or even 80 below 200 years, although Site 80 appears to level off at about that age. By interpolation

I estimate culmination for Site 67 to be about 225 years. This information coupled with the long period required for adequate regeneration suggests a rotation of about 275 years.

This observation seems to be verified by comments on the various stands of timber on Afognak Island contained in the Environmental Statement. On page 17, for example, it says that timber in the Portage Creek watershed will average approximately 25,000 board feet per acre - this area appears to have a younger stand of trees than the northern coast of the sale area. Stand age is probably about 200-250 years old. (If we allow 50 years for regeneration this suggests 275 years rotation.) The average diameter of the commercial timber is 22-24 inches. According to Table 38 in Technical Bulletin 544, 80-85% of the trees in this stand would be of commercial size, i.e. 12 inches in diameter or larger. Descriptive matter regarding other areas of the island give similar indications.

Recalculating the allowable cut to reflect present merchantability standards, to include only the presently operable timber, and to allow adequately for regeneration will further reduce the allowable cut to about 9.4 million board feet.

5. <u>There are other errors in determining the resource base</u>. No significant allowance has been made for withdrawals indicated on Map D opposite page 24 of the Environmental Statement. I have no way of determining the amount of timber included in the proposed withdrawals and therefore cannot

estimate the amount of reduction in allowable cut such withdrawals would precipitate. However, Gordon Edgars, District Ranger in Kodiak, told me that the next time they calculate an allowable cut on Afognak there will be a great reduction because of this factor.

Also, there has been a new survey of timber resources conducted in recent years. I have asked the Regional Office in Juneau several times to furnish the new surveys, but the word I get is that they are being withheld until after disposition of the North Tongas lawsuit. I can only presume that the new survey figures would be damaging to the outcome of that litigation. This strongly suggests that the survey upon which the present allowable cut is based was exaggerated. If this proves to be the case the allowable cut should be further reduced to reflect new inventory data.

6. Other observations:

Walter H. Meyer, in Technical Bulletin 544 of March, 1937. Yield of Even-Age Stands of Sitka Spruce, makes a number of interesting comments which are relevant to the present study. On page 4, he says, "Pure second-growth stands of either species are not plentiful but they have low yields."

On page 6, he says, "Hemlock and, to a lesser degree, spruce germinate freely on old logs, stumps and wood debris." He speculated that moisture of the rotting wood keeps the

seedlings alive until their roots reach into the ground. When the debris eventually rots away, many of the trees are left standing on stilts of roots. Time and again hemlock and/or spruce trees particularly the latter are found lined up on old wind falls in a row of twelve or more.

On page 44, he warns, "Yield Tables should never be used without preliminary examination of the tract for which a yield prediction is desired. Too often an inquiry as to what yields a given acreage in this or that location will produce is not accompanied by supporting survey data. The land may actually be bare or covered with old growth or otherwise non-producing. The invariable general rule is to become thoroughly familiar with the stand before attempting to predict yields. This principle, simple as it is, is often abused. Data are needed on acreage for each site and age class, on stocking and on composition. For bare land, yield predictions must be postponed until reforestation is affected.

7. <u>The Environmental Statement is inadequate because it does not give consideration to alternatives to clearcutting</u>.

As mentioned at the beginning of this report, I object to both the Timber Management Plan and the Perenosa sale because they call for clearcutting in direct contrast with repeated recommendations of Forest Service personnel.

F. R. Stevens said a shelterwood type cutting appears to be the best means of harvesting to encourage regeneration and stressed in his report of October 25, 1967 that the timber sale should be laid out to:

(1) Protect and preserve as much of the surface organic matter layer as possible.

(2) Preserve and protect as much of the advanced regeneration as possible.

(3) Leave as much standing green timber as possible.

A. S. Harris suggested in his report on reforestation following logging on Afognak that shelterwood cutting may prove to be an appropriate silvicultural system to use because of his observations about the conditions favoring regeneration.

Robert H. Ruth indicates that shelterwood cutting is being considered in Oregon as a means of reducing competition for young spruce.

I observed that the densest and fastest growing regeneration on Afognak is in the area where partial cutting was done in the 1940's by Ike Shepard near Anadel.

The Forest Service points out in the Impact Statement that soil on Afognak has little erosion resistance due to lack of iron oxide in the top layer of volcanic ash, and admits this will be an important factor to consider in determining logging

and road construction methods. Yet they ignore warnings of Harris, and Stevens that some form of shelterwood cutting is important to maintain the humus which inhibits erosion. The impact statement disposes of all this by stating: "Other silvicultural systems of harvesting including selection cutting, shelterwood and patch cutting, may have application under certain stand conditions; however, at this time clearcutting is felt to be the most applicable silvicultural method of harvest for the sale. No areas have been designated for harvest methods other than clearcutting to date."

Under the present Timber Management Plan and the existing contract, erosion following clearcutting will certainly damage salmon spawning beds. This factor should also have been discussed in connection with alternatives in the Impact Statement, but it was not.

Conclusions:

1. This Environmental Impact Statement was made long after publication of the Leopold & Barrett Report on the Juneau Unit Timber Sale. That report teaches all of us how a Multiple-Use Timber Management Plan should be drawn up. Such procedures were not considered and were probably not even known by the people who drew up the Afognak Timber Sale. The revision of the Afognak sale now proposed in no way meets the objections to the original sale, or to warnings cast on timber management planning in the Alaska Region generally by testimony produced by or introduced at the Juneau Unit trial.

2. The Impact Statement is deficient in that it does not give consideration to a shelterwood system of silviculture as an alternative, despite recommendations from Forest Service personnel. The Timber Management Plan should be revised, and the Perenosa sale cancelled for this reason alone.

3. The Impact Statement is deficient in that it fails to cope with the effects of erosion on salmon spawning beds. The Timber Management Plan should be revised, and the Perenosa sale cancelled for this reason likewise.

4. I have discussed this sale with many people on Kodiak and find that the vast majority are strongly opposed. They believe the timber sale will cause a boom situation while the timber is cut to be followed by a bust, and that irreparable damage will be done to fisheries and tourism as a result.

5. Owing to doubts about the sustained yield capacity of this island, Afognak should be regarded as a separate working circle and, a drastic revision of the Timber Management Plan is in order.

6. The allowable cut is grossly excessive in view of the Multiple Use-Sustained Yield law, and factors identified above.

7. There is sufficient timber on Afognak to provide for a local industry that will produce lumber for local consumption. This can be carried on without sacrificing multiple-use values, but only with a greatly reduced allowable cut, and more realistic silvicultural practice.

8. I find the Environmental Statement to be self serving, superficial and totally inadequate. I believe the Forest Service should take advantage of the fact that the purchasers did not cut any timber during the first 5 years of their contract, and use their regulations permitting termination of timber sales which are not environmentally sound to terminate this contract.

Gordon Robinson
Forestry Consultant

San Francisco
May 6, 1974.

ESTIMATE OF OPERABLE TIMBER

Total volume of timber, 8 M per acre and over: 4,561.7 M — Table 7A

Total volume in Working Group I, 8 M per acre and over:

Old-growth	3,337.5	116,820 acres	Mean 26.2 M per acre	Table 15A
Young-growth	851.5	42,040 acres	Mean 20.2 M per acre	
Total	4,189.0			

Coefficient of Variation:

Old-growth	39.1	Page 48
Young-growth	63.8	

Resulting estimate of total volume, 32 M per acre and over:

Old-growth	2,448 M
Young-growth	405 M
Total	2,853 M

RECALCULATION OF ALLOWABLE CUT

Note: 1. Adjustment of results of Hanzlik formula is inappropriate because:

a. Forest Service has insufficient information for making an area volume check. See sketchy information on page CA-16 of Timber Management Plan.

b. Factors change upon change of basic assumptions, as I have done.

2. I have made no effort to recalculate mean annual increment of young-growth except in Example 3, because it is a comparatively small factor, and area figures are not clearly explained in the Timber Management Plan.

3. I have made no effort to recalculate allowable cut on Working Group II because that is an even smaller factor than mean annual increment of young-growth.

1. Reflecting deletion of inoperable timber below 21 M feet per acre:

W.G. I	$\frac{2,853,000}{110}$	+ 4,781	=	30,731 M
W.G. II				354
				31,075

x .76 convert to log scale: 23.5 million board feet per year.

2. Allowing 50 years for regeneration instead of 8, and using only operable timber as in 1, above:

W.G. I	$\frac{2,853,000}{160}$	+ 4,781	=	22,611 M
W.G. II				354
				22,965

x .76 convert to log scale: 17.5 million board feet per year.

3. Using rotation determined by mean annual increment of trees 12 inches in diameter and over, allowing 50 years for regeneration, and using only present operable timber:

W.G. I	$\frac{2,853,000}{275}$	+ 1,665	=	12,039 M
W.G. II				354
				12,393

x .76 for log scale: 9.4 million board feet.

LITERATURE CITED

Gregory and Laurent - ESTIMATING YIELDS OF TIMBER STANDS ON THE CORDOVA WORKING CIRCLE REGION 10, 1960.

Harris, A. S., NATURAL REFORESTATION AFTER LOGGING ON AFOGNAK ISLAND, Pacific Northwest Experiement Station (PNW-176), May 1972, Portland, Oregon.

Meyer, Walter H., YIELD OF EVEN-AGED STANDS OF SITKA SPRUCE AND WESTERN HEMLOCK, U.S. Department of Agriculture Technical Bulletin No. 544, Washington, D.C., March 1937.

Seidler, et al., NITROGEN FIXATION BY BACTERIAL ISOLATES FROM DECAY IN LIVING WHITE FIR TREES, reprint from JOURNAL OF GENERAL MICROBIOLOGY (1972), 73,413-426.

Taylor, R. F., YIELD OF SECOND-GROWTH WESTERN HEMLOCK - SITKA SPRUCE STANDS IN SOUTHEASTERN ALASKA, U.S. Department of Agriculture Technical Bulletin No. 412, March 1934.

U.S. FOREST SERVICE, ALASKA REGION. ENVIRONMENTAL STATEMENT - MENT - PROPOSED TIMBER HARVEST IN THE PERENOSA TIMBER SALE, APRIL 15, 1974.

March 1973 QUESTIONS AND ANSWERS CONCERNING THE PERENOSA TIMBER SALE ON AFOGNAK ISLAND.

January 1968 MULTIPLE USE SURVEY REPORT on the Perenosa Timber Sale.

1967 FOREST STATISTICS FOR CHUGACH WORKING CIRCLE.

July 1967 TIMBER MANAGEMENT PLAN, CHUGACH WORKING CIRCLE, ALASKA REGION, 1967-1976.

APPENDIX K

TESTIMONY ON LEGISLATION
TO ESTABLISH A REDWOOD NATIONAL PARK
BY GORDON ROBINSON, FORESTER
BEFORE THE HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

EUREKA, CALIFORNIA
April 18, 1968

Mr. Chairman, my name is Gordon Robinson. I am a professional forester, appearing entirely on my own behalf. I have been practicing forestry for over 30 years, most of which was in management of the largest industrial forest holding in the state of California, namely the Central Pacific Land Grant.

There are several points I want to make clear to you concerning the proposed Redwood National Park.

First of all, I want to be sure you realize that the total volume of private timber in the Senate's compromise bill, S-2515, is only a one-year supply for the existing mills in Humboldt and Del Norte counties. And, timber in the Sierra Club's 72,000-acre proposal would take care of the Humboldt county mills only one year and four months. The most ambitious proposal seriously considered, the Sierra Club's 90,000 - acre plan, contains only a two-year supply of private timber for the mills of Humboldt county.

Second, one questions the dependency of industry upon old-growth timber in the Redwood Creek area. The major firms in Humboldt county affected by the park proposal are selling either old-growth timber, or old-growth logs, or both, to outside firms in large quantities. Some are even selling second growth, much of which is being shipped to Japan.

There are serious questions about the stability of timberland ownership among the forest industries of this area. Such stability is necessary if they are to practice sustained yield forestry in the manner they want us to believe they do. Of the fifteen largest firms in Humboldt county in 1953, only two are still in existence today. While there has been a trend toward consolidation into fewer larger firms, one observes that Weyerheauser and U. S. Plywood closed their

local plants and disposed of their properties within the past two years.

Private timberlands in the North Coastal Region of California are being logged about three and one-half times their rate of growth, and this applies to large as well as small ownerships. Most firms still operating here have only a few years to go on their old-growth. Then, as their many predecessors thruout the industry have done, they will either adjust to a greatly reduced output based upon small logs, or dispose of their property.

Thirdly, you should understand that most of the profit in lumbering on the wholesale level is in timber rather than in manufacture. Normally, when property is acquired under threat of condemnation, no consideration is given to the lost opportunity for profit. It is assumed that the money received can be reinvested in some other enterprise with similar income potential. However, in this case most of the profit the present owners would realize through logging would be realized through sale of timber to the National Park Service. The point is illustrated in the attached, THE PROFIT IN REDWOOD LUMBERING.

I summarize by saying forest industry in Humboldt county is rapidly declining. Sustained yield management as it is professionally understood by foresters is, to my knowledge, practiced by only one firm in the county, and they are not affected by the park. The forest industry of Humboldt county as a whole will not be seriously affected by the largest park proposal that has been seriously considered. However, if established the park will provide a new economic base for this community and is actually the only economic relief in sight.

I urge you to pass a bill to establish the largest possible Redwood National Park, with the Sierra Club's 72,000-acre proposal as an absolute minimum.

****

PRIVATE TIMBER IN VARIOUS PLANS

for a

REDWOOD NATIONAL PARK

PLAN		Volume, billion board feet (1) (2)
Sierra Club 90,000 acre plan		3.2 " " "
Administration plan		1.0 " " "
Senate Compromise (S-2515)		
North unit	.3	
South unit	1.3	1.6 " " "
Sierra Club 72.000 acre plan		
North unit	.3	
South unit	1.8	2.1 " " "

ANNUAL CUT		(3)
Del Norte county		.3 " " "
Humboldt county		1.3 " " "

IMPACT	
Sierra Club 90,000 acre plan	2.5 years' supply, Humboldt county
Administration plan	3.3 years' supply, Del Norte county
Senate Compromise (S-2515)	1 year's supply, both counties
Sierra Club 72,000 acre plan	1 year's supply Del Norte county 1.3 year's supply, Humboldt county

Gordon Robinson
Forestry Consultant 4/8/68

(1) Forest Resources Study for the Proposed Redwood National Park, Humboldt & Del Norte counties, California, Hammon, Jensen & Wallen, Oakland, Calif, Mar 15, 1967
(2) Humbold scale for Redwood, and Scribner for Douglas fir & other whitewoods.
(3) State Forest Notes, Calif. Division of Forestry, Sacramento, Nos. 19, 23, 27, 31, 35

15 Leading Lumber Producers in Humboldt County

1953 vs. 1966

1953 (1)	Output Million Bd.Ft.	1966 (2)	Output Million Bd.Ft.
The Pacific Lumber Co.	106	Georgia-Pacific Corp	184
Hammond Lumber Co.	91	Simpson Timber Co.	147
Dolly Varden Lumber Co.	50	The Pacific Lumber Co.	108
McIntosh Lumber Co.	56	Brightwood Lumber Co.	65
Eureka Redwood Lumber Co.	56	Eel River Sawmills, Inc.	62
California Barrel Co.	52	R.H. Emmerson & Son	59
Fortuna Sawmills, Inc.	43	Arkley Lumber Co.	55
Sound Lumber Co.	33	Humboldt Fir, Inc.	50
Brix Lumber Co.	32	Arcata Redwood Co.	47
Arcata Redwood Lumber Co.	32	U.S. Plywood Corp.	43
Northern Redwood Lumber Co.	30	Tidewater Mills, Inc.	33
Western Studs Co.	30	Hulbert & Muffley Co.	26
Holmes Eureka Lumber Co.	28	Arcata Plywood	26
Sugar Pine Lumber Co.	24	Carlotta Lumber Co.	25
E.L. Spier Co.	21	Cal.-Pacific Redwood Co.	19

(1) Source: Timber In Humboldt County, by Henry J. Vaux, California Agricultural Experiment Station, U.C. Berkeley, 1955

(2) Source: Forest Industries, Vol.94, No.1 for plywood and Forest Industries, Vol. 94, No. 6 for lumber.

Growth vs. Drain 1960

North Coast Region

(Planning Region 1)

	Public	Private	Total
Area Commercial Forest Land (millions of acres)	3.04	3.32	6.37
Sawtimber volume (billions of bd.ft.)	70	73	143
Net Growth (billions of bd.ft.)	.70	.72	1.42
Annual Cut " " " "	.49	2.51	3.00
Ratio of Cut to Growth	1:1.4	3.5:1*	
Area in Large Holdings (millions of acres) (50,000 acres +)		1.20	
Cut in Large Holdings (billions of bd.ft.)		.84	
Area in Small Holdings (millions of acres)		2.09	
Cut in Small Holdings (billions of bd.ft.)		1.67	

*Private forest resources are being logged 3½ times as fast as they are being replenished. This applies to large holdings as well as small.

Source: The Commercial Forest Resources and Forest Products Industries of California, John A. Zivnuska et al. U.S. Berkeley, 1965.

LITERATURE CITED

Gregory and Laurent - ESTIMATING YIELDS OF TIMBER STANDS ON THE CORDOVA WORKING CIRCLE REGION 10, 1960.

Harris, A. S., NATURAL REFORESTATION AFTER LOGGING ON AFOGNAK ISLAND, Pacific Northwest Experiement Station (PNW-176), May 1972, Portland, Oregon.

Meyer, Walter H., YIELD OF EVEN-AGED STANDS OF SITKA SPRUCE AND WESTERN HEMLOCK, U.S. Department of Agriculture Technical Bulletin No. 544, Washington, D.C., March 1937.

Seidler, et al., NITROGEN FIXATION BY BACTERIAL ISOLATES FROM DECAY IN LIVING WHITE FIR TREES, reprint from JOURNAL OF GENERAL MICROBIOLOGY (1972), 73,413-426.

Taylor, R. F., YIELD OF SECOND-GROWTH WESTERN HEMLOCK - SITKA SPRUCE STANDS IN SOUTHEASTERN ALASKA, U.S. Department of Agriculture Technical Bulletin No. 412, March 1934.

U.S. FOREST SERVICE, ALASKA REGION. ENVIRONMENTAL STATEMENT - MENT - PROPOSED TIMBER HARVEST IN THE PERENOSA TIMBER SALE, APRIL 15, 1974.

March 1973 — QUESTIONS AND ANSWERS CONCERNING THE PERENOSA TIMBER SALE ON AFOGNAK ISLAND.

January 1968 — MULTIPLE USE SURVEY REPORT on the Perenosa Timber Sale.

1967 — FOREST STATISTICS FOR CHUGACH WORKING CIRCLE.

July 1967 — TIMBER MANAGEMENT PLAN, CHUGACH WORKING CIRCLE, ALASKA REGION, 1967-1976.

APPENDIX K

TESTIMONY ON LEGISLATION TO ESTABLISH A REDWOOD NATIONAL PARK

BY GORDON ROBINSON, FORESTER

BEFORE THE HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

EUREKA, CALIFORNIA
April 18, 1968

Mr. Chairman, my name is Gordon Robinson. I am a professional forester, appearing entirely on my own behalf. I have been practicing forestry for over 30 years, most of which was in management of the largest industrial forest holding in the state of California, namely the Central Pacific Land Grant.

There are several points I want to make clear to you concerning the proposed Redwood National Park.

First of all, I want to be sure you realize that the total volume of private timber in the Senate's compromise bill, S-2515, is only a one-year supply for the existing mills in Humboldt and Del Norte counties. And, timber in the Sierra Club's 72,000-acre proposal would take care of the Humboldt county mills only one year and four months. The most ambitious proposal seriously considered, the Sierra Club's 90,000 - acre plan, contains only a two-year supply of private timber for the mills of Humboldt county.

Second, one questions the dependency of industry upon old-growth timber in the Redwood Creek area. The major firms in Humboldt county affected by the park proposal are selling either old-growth timber, or old-growth logs, or both, to outside firms in large quantities. Some are even selling second growth, much of which is being shipped to Japan.

There are serious questions about the stability of timberland ownership among the forest industries of this area. Such stability is necessary if they are to practice sustained yield forestry in the manner they want us to believe they do. Of the fifteen largest firms in Humboldt county in 1953, only two are still in existence today. While there has been a trend toward consolidation into fewer larger firms, one observes that Weyerheauser and U. S. Plywood closed their

local plants and disposed of their properties within the past two years.

Private timberlands in the North Coastal Region of California are being logged about three and one-half times their rate of growth, and this applies to large as well as small ownerships. Most firms still operating here have only a few years to go on their old-growth. Then, as their many predecessors thruout the industry have done, they will either adjust to a greatly reduced output based upon small logs, or dispose of their property.

Thirdly, you should understand that most of the profit in lumbering on the wholesale level is in timber rather than in manufacture. Normally, when property is acquired under threat of condemnation, no consideration is given to the lost opportunity for profit. It is assumed that the money received can be reinvested in some other enterprise with similar income potential. However, in this case most of the profit the present owners would realize through logging would be realized through sale of timber to the National Park Service. The point is illustrated in the attached, THE PROFIT IN REDWOOD LUMBERING.

I summarize by saying forest industry in Humboldt county is rapidly declining. Sustained yield management as it is professionally understood by foresters is, to my knowledge, practiced by only one firm in the county, and they are not affected by the park. The forest industry of Humboldt county as a whole will not be seriously affected by the largest park proposal that has been seriously considered. However, if established the park will provide a new economic base for this community and is actually the only economic relief in sight.

I urge you to pass a bill to establish the largest possible Redwood National Park, with the Sierra Club's 72,000-acre proposal as an absolute minimum.

****

PRIVATE TIMBER IN VARIOUS PLANS

for a

REDWOOD NATIONAL PARK

PLAN		Volume, billion board feet (1) (2)
Sierra Club 90,000 acre plan		3.2 " " "
Administration plan		1.0 " " "
Senate Compromise (S-2515)		
North unit	.3	
South unit	1.3	1.6 " " "
Sierra Club 72.000 acre plan		
North unit	.3	
South unit	1.8	2.1 " " "

ANNUAL CUT		(3)
Del Norte county		.3 " " "
Humboldt county		1.3 " " "

IMPACT	
Sierra Club 90,000 acre plan	2.5 years' supply, Humboldt county
Administration plan	3.3 years' supply, Del Norte county
Senate Compromise (S-2515)	1 year's supply, both counties
Sierra Club 72,000 acre plan	1 year's supply Del Norte county 1.3 year's supply, Humboldt county

Gordon Robinson
Forestry Consultant 4/8/68

(1) Forest Resources Study for the Proposed Redwood National Park, Humboldt & Del Norte counties, California, Hammon, Jensen & Wallen, Oakland, Calif, Mar 15, 1967
(2) Humbold scale for Redwood, and Scribner for Douglas fir & other whitewoods.
(3) State Forest Notes, Calif. Division of Forestry, Sacramento, Nos. 19, 23, 27, 31, 35

15 Leading Lumber Producers in Humboldt County

1953 vs. 1966

1953 (1)	Output Million Bd.Ft.	1966 (2)	Output Million Bd.Ft.
The Pacific Lumber Co.	106	Georgia-Pacific Corp	184
Hammond Lumber Co.	91	Simpson Timber Co.	147
Dolly Varden Lumber Co.	50	The Pacific Lumber Co.	108
McIntosh Lumber Co.	56	Brightwood Lumber Co.	65
Eureka Redwood Lumber Co.	56	Eel River Sawmills, Inc.	62
California Barrel Co.	52	R.H. Emmerson & Son	59
Fortuna Sawmills, Inc.	43	Arkley Lumber Co.	55
Sound Lumber Co.	33	Humboldt Fir, Inc.	50
Brix Lumber Co.	32	Arcata Redwood Co.	47
Arcata Redwood Lumber Co.	32	U.S. Plywood Corp.	43
Northern Redwood Lumber Co.	30	Tidewater Mills, Inc.	33
Western Studs Co.	30	Hulbert & Muffley Co.	26
Holmes Eureka Lumber Co.	28	Arcata Plywood	26
Sugar Pine Lumber Co.	24	Carlotta Lumber Co.	25
E.L. Spier Co.	21	Cal.-Pacific Redwood Co.	19

(1) Source: Timber In Humboldt County, by Henry J. Vaux, California Agricultural Experiment Station, U.C. Berkeley, 1955

(2) Source: Forest Industries, Vol.94, No.1 for plywood and Forest Industries, Vol. 94, No. 6 for lumber.

Growth vs. Drain 1960

North Coast Region

(Planning Region 1)

	Public	Private	Total
Area Commercial Forest Land (millions of acres)	3.04	3.32	6.37
Sawtimber volume (billions of bd.ft.)	70	73	143
Net Growth (billions of bd.ft.)	.70	.72	1.42
Annual Cut " " " "	.49	2.51	3.00
Ratio of Cut to Growth	1:1.4	3.5:1*	
Area in Large Holdings (millions of acres) (50,000 acres +)		1.20	
Cut in Large Holdings (billions of bd.ft.)		.84	
Area in Small Holdings (millions of acres)		2.09	
Cut in Small Holdings (billions of bd.ft.)		1.67	

*Private forest resources are being logged $3\frac{1}{3}$ times as fast as they are being replenished. This applies to large holdings as well as small.

Source: The Commercial Forest Resources and Forest Products Industries of California, John A. Zivnuska et al. U.S. Berkeley, 1965.

THE PROFIT IN REDWOOD LUMBERING

There is no question that owners of property acquired under threat of condemnation by our government will be paid fair market value. Actually the courts tend to be generous in condemnation suits. In the case of the Redwood National Park, however, the timberland owners stand to realize most of the profit they would normally realize through manufacturing as well. Profit in lumbering, on the wholesale level, is mostly in timber -- not in logging and manufacturing. Except for re-manufacturing, which is often a separate business, sale of standing timber to the National Park Service will yield most of the profit normally derived from logging and manufacturing.

In round numbers, the economics of redwood lumbering is as follows:

TIMBER ACCOUNT			
Fair market value of standing timber as of first of the year in which cut.....		$30.00[1]	
Original purchase price, or depletion rate.....		5.00[2]	
Profit in stumpage.....		$25.00	
Capital gains tax (25%).....		6.25[3]	
Net income after federal taxes.....			$18.75
MANUFACTURING ACCOUNT		$100.00[1,4]	
Wholesale lumber price.....			
Stumpage.....	$30.00)		
Logging and hauling.....	30.00)[1]		
Manufacturing.....	30.00)		
Total cost of production.....		90.00	
Profit in manufacturing.....		10.00	
Corporate income tax.....		4.90[3]	
Net income after federal taxes.....			$5.10
COMBINED NET INCOME.....			$23.85
Proportion of profit arising from stumpage alone			79%

Gordon Robinson
Forestry Consultant 4/8/68

References:

1. Summaries of USFS stumpage appraisals
2. Annual statement of Arcata Redwood Co. 12/31/65
3. Internal Revenue Code, U.S.
4. Index of wholesale lumber prices, U.S. Department of Commerce

INDEX

VITA

Harold K. Steen

Born: 12 May 1935 U. S. citizen

Education: BSF, University of Washington, 1957
MF, University of Washington, 1962
PhD, University of Washington, 1969

Employment:

University of California, Santa Cruz, 1971-present. Fellow of College Eight and Lecturer in Environmental Studies.
Forest History Society, Santa Cruz, CA. 1969-present.
Executive Director, 1978-present.
Associate Director for Research and Library Services, 1973-78.
Assistant Director and Editor, 1969-73.
U.S. Forest and Range Experiment Station, Portland, OR, 1962-65.
Forest fire research.
U.S. Forest Service, North Bend, WA, 1957-58. General Forest Management.

Professional Accomplishments:

Editorial Board, Environmental Review, 1976-present.
Consulting Editor, Journal of Environmental Education, 1973-81.
Chairman, Forest History Working Group, Society of American Foresters. 1974-78.
Sierra Club History Committee, 1976-present.
Registered Professional Forester, State of California, License #792

Major Publications:

The U.S. Forest Service: A History (Seattle: University of Washington Press, 1976. 2nd printing, 1977.)
"Grazing and the Environment: A History of Forest Service Stock-Reduction Policy," Agricultural History 49 (January 1975).
"SAF and its History," Journal of Forestry 73 (August 1975).
"Oral History: A Valuable Supplement," Journal of Environmental Education 8 (Winter 1976).

Honorary Societies and Organization Memberships: Phi Alpha Theta (History), Sigma Xi (Science), Xi Sigma Pi (Forestry), American Forestry Association, American Historical Association, Organization of American Historians, Sierra Club, Society of American Foresters, Western History Association.

References: Dr. Kenneth S. Norris, Environmental Studies Board, University of California, Santa Cruz, CA 95064

Harold P. Newson, Vice President & General Manager, National Forest Products Association, 1619 Massachusetts Avenue, N.W., Washington, DC 20036

Dr. David R. M. Scott, College of Forest Resources, University of Washington, Seattle, WA 98195