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It is recommended that the oral history be cited as follows:

Henry J. Vaux

Professor Henry J. Vaux, who helped shape California's pioneering rules for forest management and harvesting, died Dec. 22 at his Berkeley home after a brief illness at the age of 88.

He was an often-honored professor at the University of California at Berkeley for half a century, dean of the campus's School of Forestry and two-term chairman of the California Board of Forestry.

"He's a giant in forest policy in the United States," said Rick Standiford, associate dean for forestry in UC's College of Natural Resources.

"He played a major role in the licensing of foresters in California, which set the highest standard for professionals anywhere in the world." After becoming dean of the School of Forestry at the University of California at Berkeley in 1955, Professor Vaux guided the school through a decade of rapid growth that saw it become one of the nation's top centers for forestry research and education.

He played a key role in advising state legislators and policymakers in the writing of major forestry laws in the 1960s and '70s. These included the Forest Practice Act of 1973, which empowered the state to protect environmental elements such as soil and water on forested lands, the Forest Taxation Reform Act of 1976, which removed tax incentives for premature timber harvesting, and the California Forest Improvement Act of 1978, which created government-industry partnerships to improve forest management on private land.

He was appointed by former Gov. Edmund G. "Jerry" Brown as chairman of the state Board of Forestry, serving from 1976 until 1983, and was credited with strengthening the board's policy-making role.

In shaping state policy, Professor Vaux played a key role in implementing state forest-practice rules that established the "strictest environmental oversight for timber harvesting and forest management in the nation," Standiford said.

He retired as a regular UC professor in 1978, but continued research and teaching in an emeritus status. Author of 140 publications, he won many professional honors, the most recent coming last fall when UC Berkeley established the Henry Vaux Distinguished Professorship in Forest Policy. Last summer, UC dedicated the Henry Vaux Forestry Education Center at Blodgett Forest, a university research station in the Sierra foothills that Professor Vaux helped survey when he was a UC graduate student in the 1930s.

He also received the Gifford Pinchot Medal from the Society of American Foresters, an honorary degree from Haverford College; a Lifetime Achievement Award from the American Foresters Association and UC's Berkeley Citation.

Born and raised in Bryn Mawr, Penn., the son of a Philadelphia lawyer, he received his undergraduate degree from Haverford and his master's and doctoral degrees from UC Berkeley.

He is survived by two children, Alice Vaux Hall of Portland, Ore., and Henry Vaux Jr., of El Cerrito, and three grandchildren.

A celebration of his life will be held at 3:30 p.m. on Jan. 27 at the UC Berkeley Men's Faculty Club. The family requests that donations be made to the Henry Vaux Distinguished Professorship in Forest Policy, College of Natural Resources, University of California, Berkeley, CA 94720-3100.

--Charles Burns
DONORS TO THE HENRY J. VAUX ORAL HISTORY

The Bancroft Library, on behalf of future researchers, wishes to thank the following organizations and individuals whose contributions made possible this oral history of Henry J. Vaux. Special thanks are due Phillip S. Berry and Betty Helmholz for their assistance in securing funding.

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UNIVERSITY HISTORY SERIES LIST
PREFACE

When President Robert Gordon Sproul proposed that the Regents of the University of California establish a Regional Oral History Office, he was eager to have the office document both the University's history and its impact on the state. The Regents established the office in 1954, "to tape record the memoirs of persons who have contributed significantly to the history of California and the West," thus embracing President Sproul's vision and expanding its scope.

Administratively, the new program at Berkeley was placed within the library, but the budget line was direct to the Office of the President. An Academic Senate committee served as executive. In the more than three decades that followed, the program has grown in scope and personnel, and has taken its place as a division of The Bancroft Library, the University's manuscript and rare books Library. The essential purpose of the office, however, remains as it was in the beginning: to document the movers and shakers of California and the West, and to give special attention to those who have strong and often continuing links to the University of California.

The Regional Oral History Office at Berkeley is the oldest such entity within the University system, and the University History series is the Regional Oral History Office's longest established series of memoirs. That series documents the institutional history of the University. It captures the flavor of incidents, events, personalities, and details that formal records cannot reach. It traces the contributions of graduates and faculty members, officers and staff in the statewide arena, and reveals the ways the University and the community have learned to deal with each other over time.

The University History series provides background in two areas. First is the external setting, the ways the University stimulates, serves, and responds to the community through research, publication, and the education of generalists and specialists. The other is the internal history that binds together University participants from a variety of eras and specialties, and reminds them of interests in common. For faculty, staff, and alumni, the University History memoirs serve as reminders of the work of predecessors, and foster a sense of responsibility toward those who will join the University in years to come. For those who are interviewed, the memoirs present a chance to express perceptions about the University and its role, and to offer one's own legacy of memories to the University itself.

The University History series over the years has enjoyed financial support from a variety of sources. These include alumni groups and individuals, members of particular industries and those involved in specific subject fields, campus departments, administrative units and special groups, as well as grants and private gifts. Some examples follow.
Professor Walton Bean, with the aid of Verne A. Stadtman, Centennial Editor, conducted a number of significant oral history memoirs in cooperation with the University's Centennial History Project (1968). More recently, the Women's Faculty Club supported a series on the club and its members in order to preserve insights into the role of women in the faculty, in research areas, and in administrative fields. Guided by Richard Erickson, the Alumni Association has supported a variety of interviews, including those with Ida Sproul, wife of the President; athletic coaches Clint Evans and Brutus Hamilton; and alumnus Jean Carter Witter.

The California Wine Industry Series reached the University campus by featuring Professors Maynard A. Amerine and William V. Cruess, among others. Regent Elinor Heller was interviewed in the series on California Women Political Leaders, with support from the National Endowment for the Humanities; her oral history included an extensive discussion of her years with the University through interviews funded by her family's gift to the University.

On campus, the Friends of the East Asiatic Library and the UC Berkeley Foundation supported the memoir of Elizabeth Huff, the Library's founder; the Water Resources Center provided for the interviews of Professors Percy H. McGaughey, Sidney T. Harding, and Wilfred Langelier. Their own academic units and friends joined to contribute for such memoirists as Dean Ewald T. Grether, Business Administration; Professor Garff Wilson, Public Ceremonies; Regents' Secretary Marjorie Woolman; and Dean Morrough P. O'Brien, Engineering.

As the class gift on their 50th Anniversary, the Class of 1931 endowed an oral history series titled "The University of California, Source of Community Leaders." These interviews will reflect President Sproul's vision by encompassing leadership both state- and nationwide, as well as in special fields, and will include memoirists from the University's alumni, faculty members, and administrators. The first oral histories focused on President Sproul himself. Interviews with 34 key individuals dealt with his career from student years in the early 1900s through his term as the University's 11th President, from 1930 to 1958.

More recently, University President David Pierpont Gardner has shown his interest in and support for oral histories, as a result of his own views and in harmony with President Sproul's original intent. The University History memoirs continue to document the life of the University and to link its community more closely--Regents, alumni, faculty, staff members, and students. Through these oral history interviews, the University keeps its own history alive, along with the flavor of irreplaceable personal memories, experiences, and perceptions.

A full list of completed memoirs and those in process in the series is included in this volume.
The Regional Oral History Office is under the administrative supervision of Professor James D. Hart, the Director of The Bancroft Library.

Willa K. Baum
Division Head
Regional Oral History Office

Harriet Nathan
Project Head
University History Series

9 November 1987
Regional Oral History Office
Room 486 The Bancroft Library
University of California
Berkeley, California
INTRODUCTION

Henry James Vaux is a quiet, highly controlled person with a natural authority and intellectual competence that could easily have led to his being addressed in a somewhat formal manner. In fact, he has been known long and widely as Hank Vaux. He was appointed as a lecturer in the School of Forestry in mid-1948. I had been appointed as an instructor in forestry just six months earlier. That was the only time in forty years of close association that I was ever ahead of Hank.

He was born and raised in Pennsylvania in an old and distinguished Philadelphia family. In the family tradition, he attended Haverford College, graduating in 1933 with a degree in physics. His family had long had a love of wilderness, centered on the Canadian Rockies. His uncle, William Vaux, Jr., initiated the first continuous detailed glacier study in Canada. His father, George Vaux, Jr., an attorney, continued these studies. He was also an active climber, a talented mountain photographer, and a member and chairman of the U.S. Board of Indian Commissioners. And his aunt, Mary Vaux Walcott, was an early woman mountaineer who spent more than forty summers in the Canadian Rockies and was an active mountain photographer and writer.

Perhaps reflecting this family background and a love of the land from his own early experiences, Hank promptly turned to forestry as a career, coming to Berkeley and completing an M.S. in forestry in 1935. He then worked as a forest engineer for Crown Willamette Paper Company in Oregon, became an instructor in forestry at Oregon State College, initiated doctoral studies in agricultural economics with specialization in forest economics at Berkeley, worked on forest ownership studies in Louisiana, served in the U.S. Naval Reserve, and worked in forest economics research for the U.S. Forest Service. Upon completion of his Ph.D. in 1948, he was immediately appointed as a lecturer in forestry at the University of California. He has continued on the forestry faculty to the present.

As one of the first five professional foresters in the United States to complete a Ph.D. in economics or agricultural economics, he played a major role in bringing forest economics to its present stage of maturity. By 1953 he and William A. Duerr of the New York State College of Forestry had organized and edited the work of sixty-seven contributors and published the book, Research in the Economics of Forestry. This impressive project served to define the field of forest economics and to advance and demonstrate the methodology of research in forest economics.

In his own work Hank has continued to contribute to the advancement of the methodology of forest economics research. His major studies are models of effective economic analysis and clarity of presentation in addition to being important substantive contributions. While his initial studies centered on
demand, consumption, and requirements analysis, his work shifted increasingly to policy analysis. His work in this field has been marked by an impressive breadth and comprehensiveness of approach.

Following his appointment to the university in 1948, his talents as a faculty member were quickly recognized. In 1950 his appointment was regularized from lecturer to associate professor. In 1953 he was promoted to professor of forestry and in 1955 he was appointed as the third dean of the School of Forestry. He moved quickly to strengthen the internal administration of the school and to make needed faculty appointments. His ten years as dean were a period of rapid growth for the school. The size of the faculty nearly doubled, the budget increased nearly four-fold, and the research program flourished.

While serving as dean he proposed the establishment of the Wildland Research Center in 1958, served as its first director, and played a key role in the guidance of the major wilderness study conducted by the center in 1960. Nationally, he participated in the initiation of the McIntire-Stennis research program in forestry and represented forestry education in the major forestry research planning effort which was involved in the inclusion of forestry under the Current Research Information System of the Department of Agriculture.

He completed his service as dean in 1965 and returned to full-time teaching and research. As a teacher his main responsibilities were for undergraduate and graduate courses in forest economics and forest policy. Meticulous in preparation and carefully controlled in presentation, he was an effective and demanding teacher. He was best known for his senior year course in forest policy, which he initiated in 1948 and which became the focus of his own interests. Thus it deserves to be noted that in 1976, when the course was at an absolute peak in quality and student enthusiasm, he generously turned the course over to me, knowing that I had long been interested in teaching forest policy. During the remaining two years until his retirement in 1978, his teaching was centered in forest economics and a graduate seminar in policy.

In the midst of his activities in teaching, research, administration, and university service, Hank also managed to be active in the development of forest policy in California. Throughout his ten years of service as dean he also served as an honorary member of the State Board of Forestry. He was active in board meetings and deliberations, chaired its Joint Committee on Forest Taxation, and served in various other capacities. As a faculty member, he had a major role in the preparation of a task force report which established the approach incorporated into the state's Forest Practice Act of 1973 and was directly influential in developing legislative interest in the Forest Taxation Reform Act of 1976.

Thus it was fitting that as his active career on campus was drawing to a close he became involved in a major new phase of his work in forestry. In the spring of 1976 he was appointed as chairman of the State Board of Forestry by Governor Jerry Brown. He served in this capacity for seven years, stepping down in April, 1983. He moved promptly to a reorganization under which the board employed its own full-time secretary and additional support staff, thus giving the board increased stature and independence. Much of his and the board's time
was devoted to the endless and thankless task of developing, reviewing, and revising the detailed regulations through which the Forest Practice Act is developed and given meaning in terms of what actually happens on the private and non-federal public forest lands of California. Conflicts were intense, at times emotional, and in some instances personal relationships were seriously affected.

To these difficulties there were added the confusions, complexities, and competition of the overlapping authorities and responsibilities of the various public agencies concerned with natural resources in the state. Issues faced by the board during this period included ensuring that timber harvest plans were the functional equivalent of the environmental impact reports required by state law and were accepted as such, working out relationships with the State Water Resources Control Board so that the regulations developed under the Forest Practice Act could serve and be enforced as the best management practices for silvicultural operations required under Section 208 of the Federal Water Pollution Control Act, resolving jurisdictional conflicts with the California Coastal Commission, responding to conflicts between county authority and state preemption of forest practice regulation, and determining if the Forest Practice Act could and should be used to prevent logging on private forest lands proposed for acquisition for the Redwood National Park.

Thus Hank's talent for conflict resolution and his dedication to developing a workable consensus were continuously tested and displayed during his service as chairman of the Board of Forestry. In this capacity he also advised the legislature on various acts and bills relating to the forest resources of the state, served as chairman of the Forest Improvement Committee established under the California Forest Improvement Act of 1978, worked for funding of the California Forest Improvement Program, and cooperated and advised in the studies under the California Forest Resources Assessment and Policy Act of 1977. Regardless of whether or not one agrees with everything that was done during this intense period of forest policy development in California, Hank's role must be recognized as public service of the highest order.

His contributions and attainments have been widely recognized. He is a fellow of the Society of American Foresters, a Fellow of the American Association for the Advancement of Science, and a Fellow of the California Academy of Sciences. He has served as a member of the Council of the Society of American Foresters, as director of the Forest History Society, and as a director and honorary vice-president of the American Forestry Association. In 1967 he received the Award for outstanding Current Achievement of the Western Forestry and Conservation Association, in 1978 he was awarded the Berkeley Citation by the University of California, in 1983 he was awarded the Gifford Pinchot Medal by the Society of American Foresters, and in 1985 he received an honorary Doctor of Science degree from Haverford College.
We are fortunate indeed to have the recollections and insights of Henry J. Vaux in this oral history of a period in California forestry to which he was a major contributor.

John A. Zivnuska
Professor Emeritus

October, 1987
Department of Forestry
University of California
Berkeley, California
INTERVIEW HISTORY

Henry J. Vaux, dean emeritus of the University of California School of Forestry and former chairman of the California State Board of Forestry, has worked closely with the Regional Oral History Office (ROHO) since its early days in the 1950s and 1960s. He first served as advisor for a lengthy series of oral histories of prominent foresters conducted under the sponsorship of the Forest History Society. In 1964 he was principal investigator for ROHO's series on the History of Forest Service Policy, twenty interviews funded by Resources for the Future. With these auspicious beginnings, ROHO has continued to make the documentation of forestry, natural resources, and conservation major areas of inquiry.

In 1984, recognizing the importance of the University of California's contribution to the state in these areas, ROHO began planning a new oral history series to focus on the University's role in the management of California's natural resources. We again turned to Henry Vaux for advice and encouragement, and he assisted us in launching the series with a memoir of UC forestry alumnus A.E. Wieslander.

The opportunity to document the career of our esteemed advisor came when the Forest History Society, our first collaborator in forestry endeavors, requested ROHO to interview Henry Vaux for their study of the history of forest economics. The three interview sessions for this project, conducted in June 1984, covered biographical material on his family, education, and early career; his work in the early 1950s to help define the new discipline of forest economics; and his observations on trends, turning points, applications, and limitations of forest economics over the subsequent thirty years. The interviews were conducted with the assistance of L. Dwight Israelson, professor of economics at Utah State University, who headed the study of the history of forest economics for the Forest History Society. Harold K. (Pete) Steen, executive director of the Forest History Society, also joined the interviewing team briefly, as well as assisting in planning the project. The transcript of the Henry Vaux interview resulting from these three recording sessions was made available in 1986 as part of the ROHO volume entitled History of Forest Economics, which included interviews with UC alumnus H.R. Josephson and UC professor emeritus Myron Krueger.

Although the forest economics interviews covered Henry Vaux's contributions to his academic discipline, it was not within the scope of the Forest History Society study to document additional aspects of his career: teacher for nearly thirty years of graduate and undergraduate students at the UC School of Forestry; dean of the school during a time of expansion and curriculum revision; and chairman of the California State Board of Forestry during a crucial time in its history. With the generous support of the Laird, Norton Foundation and of numerous colleagues of Henry Vaux, we were able to return for seven interview
sessions recorded from October 1985 to February 1986. The resulting transcript, lightly edited for clarity and accuracy and reviewed by Professor Vaux, is presented here along with his forest economics interviews as a full oral history memoir of a University of California faculty member whose influence has been strong not only in his own academic field, but also in University governance, forestry education, and state and national forest policy.

In the three interview sessions concerning University history and educational issues, Vaux recalled his experiences as dean of the School of Forestry from 1955 to 1965. Topics included faculty recruitment and promotion during a period of swift expansion of the school, undergraduate and graduate curriculum revision, the Forest Products Laboratory, and the Wildlands Research Center. Vaux made informed observations of changing student perspectives as the career-oriented post-World War II students were followed by students of the 1960s and 1970s. During these stormy years the special unity and esprit de corps of the School of Forestry was challenged by the Free Speech Movement and the Vietnam War and Third World students protests. Vaux also discussed the impact of the environmental movement in these years and the creation of the College of Natural Resources in 1974, a reorganization of the School of Forestry and the College of Agricultural Sciences at Berkeley in which Vaux played a leading role. This section of the oral history contributes significantly to the institutional history of UC and to an understanding of forestry education issues.

Vaux was appointed to the chairmanship of the California State Board of Forestry by Governor Jerry Brown in 1976 and served until 1983, during a time of intense political controversy surrounding a variety of forestry issues—from the efforts to stop logging on areas under consideration for inclusion in an expanded Redwood National Park to the need for comprehensive review of forest practices rules mandated by state legislation and the Federal Water Pollution Control Act of 1972. In discussing his work on the board, Vaux concentrated on the crucial historical information which was not recorded in minutes of meetings and other written records. His oral history gives the researcher an understanding of the functioning of this important board, illuminating the relations between disparate members and between the board and the State Department of Forestry, the legislature, the governor's office, local counties, the timber industry, the forestry profession, and environmental groups.

This comprehensive, orderly, and insightful treatment of the work of the California State Board of Forestry reflects the style in which Henry Vaux guided the board during his chairmanship. It makes clear why he is so highly regarded even by those who held conflicting viewpoints on many of the controversial issues confronting the board. Researchers interested in the role of California state boards and commissions, in the regulation of private forestry in California, and in forest policy issues in general will find a rich resource in this final section of the Henry Vaux oral history.
It gives us great pleasure to present this oral history memoir of a University of California faculty member whose career epitomizes the service the University provides not only to the academic world but to the people and environment of the State of California as well.

Ann Lage
Interviewer/Editor

November 12, 1987
Regional Oral History Office
486 The Bancroft Library
University of California
Berkeley, California
I BACKGROUND, EDUCATION AND EARLY CAREER

[Date of Interview: June 14, 1984]

Philadelphia Upbringing and Career Choice

Lage: We want to start with your background today to get some idea of what in the early years might have influenced the direction you took--your interest in forestry and economics and public policy and your approach to the discipline of forest economics. Let's just begin with where you were born and when you were born.

Vaux: I was born in Bryn Mawr, Pennsylvania, November 6, 1912. My father was an attorney in Philadelphia. My mother was born in Wisconsin and as a girl went to live in Concord, Massachusetts, and came to Philadelphia from there. We lived in a very lovely wooded part of Bryn Mawr where there were trees all around, but I don't think that had any particular influence on my going into forestry.

Lage: Is Bryn Mawr very close to Philadelphia?

Vaux: Eleven miles away. It is a suburb of Philadelphia. I grew up in a Quaker family and attended a Quaker school in Philadelphia and went for my undergraduate degree to Haverford College where I took a BS in physics. It was a liberal arts program and the intensity of physics preparation was not very great. It was important to me, however, because out of that experience I learned that I was not a physicist, which was a very important thing to learn.

Lage: Had your idea been to go on in physics at one time?

#This symbol indicates that a tape or a segment of a tape has begun or ended. For a guide to the tapes see page 338.

Pages 1-118 have been previously printed in the ROHO volume, History of Forest Economics, 1986.
Vaux: Well, I think I was kind of at a loss and simply searching. My brother, who was four years older than I was, had majored in physics for whatever reason, and lacking any better choice that I could see at that time, I simply followed in his footsteps.

Lage: Let's just back up a minute. Did you have other siblings besides your older brother?

Vaux: No. There were just two children in the family.

Lage: And what about boyhood interests—Boy Scouts, or any particular interest in the out-of-doors?

Vaux: Well, I was interested in the out-of-doors in a variety of ways. When I was a child, my health was not particularly robust. I guess you would say that I was rather carefully protected by my parents.

I always enjoyed sports and outdoor activities of one kind and another. I became an enthusiastic golfer as a boy. We used to go to the Pocono mountains in the summertime, and I'd do a certain amount of walking and that sort of thing. But I wouldn't say that I was an outdoor type particularly. I was not engaged in Boy Scouts or any of those sorts of activity. The reasons I got into forestry were, I think, rather numerous, but none of them very positive. I graduated from college in 1933. That was not a year when it was very evident what anyone might want to do.

Lage: No jobs searching you out.

Vaux: That's right. As I said, my father was an attorney, but for various reasons I didn't want to be a lawyer. And in a way I think I was reacting a little bit against my boyhood environment and subconsciously was seeking something that would take me out of that.

One of my father's good friends, also his second cousin, was a man named Elwood Wilson. And Elwood Wilson was a very eminent Canadian forester of the first generation of foresters in Canada. We went once or twice to visit him in Canada, and he talked to me about forestry. So I had that exposure. My father died when I was fourteen years old, so I didn't have any guidance from him on where to go. But both Elwood Wilson and one or two others among my father's friends suggested to me when I was a junior in college—and I was sort of feeling around: "Well, what the heck am I going to do?"—they suggested to me that forestry might be an emerging important field and a good thing to get into at that time.
Vaux: I've often thought since that they were quite prescient in anticipating that, because the progress that forestry made in the next several decades was quite remarkable. So the combination of those conversations with a love that I had cultivated for the western United States as a result of traveling with my family, and the sort of subconscious desire to get away from the Philadelphia environment, came out as, well, go to the University of California and study forestry.

Lage: So you had come out here as a child with your family?

Vaux: I had not come to California; I'd come with my family to various places in the West. Then in my junior year in college I took a trip with a college friend, and we came to California at that time. I saw the Berkeley campus, and California intrigued me. So I came. But my education was not exactly well planned because I got through a complete undergraduate curriculum in physics without ever having taken a course in biological sciences or botany, or without ever having taken a course in economics.

So I arrived in Berkeley as a graduate student, nominally, but having to start out with Botany 1A and Economics 1A.

Lage: Was there any trouble getting into the program? I read in this book you've loaned me* that you were the first person or one of the few to go on and get your master's who didn't have a BS in forestry.

Vaux: I wouldn't say it was difficult. It was time consuming, because instead of getting a master's degree in one year, it took me two and a half years to get my master's degree because I, in effect, had to make up all that undergraduate work. They made a few concessions but not very many. It was mainly a matter of going back and getting all the undergraduate work that I hadn't had at Haverford.

Lage: So it was basically a one-year program.

Vaux: The master's degree was a one-year program if I had come with an undergraduate major in forestry. But moving from a liberal arts program into a highly professionalized undergraduate degree, there was an awful lot that I hadn't had as an undergraduate. I simply had to take a year to make it up.

*Casamajor, Paul, ed., Forestry Education at U.C.--The First Fifty Years (California Alumni Foresters, Berkeley, California, 1965).
The Master's Program in Forestry, UC Berkeley

Lage: Tell me something about the program at Cal.

Vaux: At that time it was the Division of Forestry in the College of Agriculture. The division was located in Giannini Hall throughout the time that I was a student. It was housed in the basement and the first floor of Giannini Hall. The faculty was simply, in my opinion, a remarkable group of men; each one of them was in his own way outstanding.

Professor [Walter] Mulford was the chairman of the division, head of the department. Professor Mulford was the kind of person who even then was a rare personality in terms of his graciousness and courtesy and his thoughtfulness and intensity of purpose, which he communicated very readily to students. I think perhaps Professor Mulford is best described as a kind of a father figure to everybody who was in the school. I took his course.

Then there was Professor Emanuel Fritz, of course, who taught wood products and lumbering. I took both of his courses. Professor [Myron E.] Krueger taught logging methods and production economics. I took both of his courses. I was quite close to Professor [Percy] Barr, who was the professor of forest management. As I moved into the graduate phase of my program, I worked more and more with Professor Barr and at one time was his research assistant.

Lage: He was in forest management?

Vaux: Forest management, yes. He was interested in the financial aspects of forestry, and that was one of the sources of my ultimate interest in forest economics. So those, I suppose, were the people with whom I did the most work, but there were some other remarkable teachers on the faculty: Professor [Arthur W.] Sampson, who taught ecology and range management.

Lage: What was ecology in those days? I always think of it as being something that evolved later.

Vaux: That was one of the marks of the exceptional quality of the school in that, I think, that must have been the first course in ecology that was taught in a forestry school. This was 1933, remember, and not too many people were talking about ecology. As a matter of fact, I wrote to Elwood Wilson, this Canadian forester, to tell him how I was getting along, because he had been interested, and I said I was taking ecology. He wrote me back and said, "What is ecology?"--which simply is evidence that it wasn't a common term in those days.
Vaux: Professor Sampson, who taught ecology, had taken his Ph.D. at the University of Nebraska under Frederic E. Clements a famous and very notable early ecologist at the University of Nebraska, who did a lot in developing the notion of plant associations and plant communities and who, from the standpoint of plant community and plant association, was one of the first ecologists in the country, although the field evolved a lot out beyond his views. That, essentially, was the sort of thing that Sampson was teaching.

I think the intellectual reason for ecology being at Berkeley at such an early date was Sampson's presence and his background in ecology as a basis for range management. What he taught was really range ecology rather than forest ecology. What was taught was strictly plant ecology. Whether or not there were courses in animal ecology on the campus then, I don't know. I rather doubt it. Of course, the field of ecology was developed widely and rapidly, particularly in the direction of synecology during the decade or so after I took Sampson's course.

Then I took silviculture from Professor Baker, who later became a dean of the school. A very important person on the faculty— at that time he was graduate adviser— was Professor [Joseph] Kittredge, who again was a remarkable personality, one of the most meticulous scholars that I ever encountered. His lectures were just unbelievably scholarly, with a bibliography of about fifty items for every lecture, all meticulously noted and so on. His field was forest influences and watershed management. So I got a fairly broad exposure to all aspects of forestry from those people, and I think that characterized the program of the school at that time, along with Professor Mulford's view that specialization shouldn't come until after people had had a pretty thorough grounding in all aspects of forestry.

Lage: And yet he did have the specialists in every field.

Vaux: Yes. Given the state of forestry education at the time, they were among the best people in the field. It was a very, very strong faculty.

Lage: Now that you've been in the field so long, would there be a way of comparing Berkeley at that time to some of the other forestry schools?

Vaux: Well, probably the best way to do that is to say that at the time I was deciding what school I would go to, I talked to various people and looked up catalogs and that sort of thing and got the fairly clear impression that at that time there were four schools of forestry that were most highly regarded. Without ranking them, those four were Yale, Michigan, California, and Syracuse.
Vaux: My choice of California among those four, I think, was based solely on the fact that the idea of going to school in California had a lot more appeal to me than New Haven or Syracuse or Ann Arbor. And, I think, Berkeley at that time was recognized for the caliber and quality of its graduate program, just as it is today.

Forestry and Social Reform

Lage: I ran across an interesting article by Professor Zivnuska: "The Social Approach to Forestry." Was that a particular vision of forestry that was stressed at Cal? Or is that part of forestry as a whole, to incorporate a reform impulse?

Vaux: American forestry itself developed, really, as an aspect of reform. [Gifford] Pinchot was not only the first forester and the first chief of the Forest Service, but he was a very influential man in the formulation of Teddy Roosevelt's progressive political views. So the reform notion was a strong element in Pinchot's view of forestry. I think it was still a strong element in forestry at the time I was going to school.

If anything, I would say that while in the minds of many foresters (myself included) there's a very strong social thrust to forestry, one of the things that's happened, perhaps, during my career is that there are some foresters who don't see that as important today. They think that's not a significant part of forestry or the field, and indeed there's a certain dichotomy in the profession depending upon how much weight one gives to the societal thrust.

Lage: So that's throughout the entire profession of forestry.

Vaux: In my judgment, yes.

Lage: Would that exist in forest economics?

Vaux: Yes. It very definitely exists in forest economics. One can trace it in several dimensions. There's a new book out by Richard Alston— I think the title of it is The Individual vs. the Public Interest** where

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*In Forestry in Science and Society (1965).

Vaux: he analyzes this dichotomy in some depth. I think he oversimplifies the situation because he sets up the forest economists as being the group within forestry that articulated and emphasized the individualistic thrust in forestry, in contrast to the traditional German forestry, which he traces back to a philosophy of the public interest and of common social values coming into forestry through the German influence.

I think it was more complicated than that, but at least Alston's book quite explicitly analyzes these two views and some of the conflict between them. You see it in differences between institutions. Personally, I would say that the social view of forestry—the view of forestry as a social enterprise—has always been in one way or another characteristic, to a degree, of a number of the strong faculty members in this school of forestry.

Particularly in the last decade or two, members of the economics group at the University of Washington have been in the forefront of the individualistic concept of forest economics, and they've been much concerned with the privatization of forest land, and this kind of thing, as policies to implement a more individualistic view of what forestry should mean.

Lage: I want to define the terms of the social view. When you mentioned privatization of land, are we talking about ownership?

Vaux: Well, the philosophical dichotomy is well expressed by Alston. He speaks of it in terms of two alternative ways of looking at the public interest. One view is that the public interest is simply the sum of all individual private interests, however one might measure those. There isn't anything that transcends the sum of the individual private interests. That would be the individualistic philosophy as I perceive it. It would lead to a policy of maintaining all forests in private ownership ("privatization") as the way to achieve the public interest.

Then the other view is that there are societal values that transcend the sum of all the individual values, and that these have to be taken into account if you're really going to achieve the public interest. The problem of defining the public interest is how you identify and measure those societal values that transcend individual ones. So those are the two positions. Privatization is, in a way, symbolic. If you're a very strong individualist, in this sense, then there's no reason for government ownership of forests, and everything would be run much better if you didn't have the government mucking around doing something that private individuals ought to be doing. Private individuals know much better what their interests are than government does, which gets all confused with political questions.
Privatization is a policy that would tend to implement an individualistic view of where public interests lie in forestry.

And also, I would think, issues relating to how much public control over private forestry...

Oh, very much so. The individualists would not have any government regulation of private forest lands such as we have in this state.

Now, could you say how this social view of forestry was promulgated at Berkeley? Was it through particular professors or particular courses? Did it put a stamp on the graduates, do you think?

Well, there was never a monolithic view in Berkeley. For example, Professor [Emanuel] Fritz, in his active teaching career, was always very much of an individualist, although one can't go too far with that because Professor Fritz was in fact one of the key authors of the first California Forest Practice Act [1946] to regulate private owners. That may seem a little anomalous, and it is a little anomalous, but not as anomalous as it might seem. Fritz was still a strong advocate of individualism and put the responsibility on the private owners of forest land and worked within those constraints.

Professor Mulford had a very strong view of a transcendent public interest in forestry and social values in forestry that went beyond the sum of individual values. But much of this viewpoint came, not just from the individual professors, but from the policy environment of the times. When I was in the forestry school as a student--this was the mid-1930s--there were the New Deal and the Civilian Conservation Corps, the Roosevelt approach to substantial acquisition of private land and adding it to federal holdings as a device both to promote conservation and at the same time to try to relieve some of the economic pressures on the rural economy and all that sort of thing.

So there was a strong context of social values in forestry that was independent of what individuals in the forestry school were saying, or was reinforcing the viewpoints of those who had a public interest concept of forestry.

So it's partly a generational thing also. Do you see that as you observe younger people coming into the profession, that without having had the experience of the Depression and the New Deal, they may have a different point of view?

Yes. And it comes and goes. In the 1950s there was a strong economy, a very great interest in industrial forestry. The public interest thing was suppressed to a considerable degree in the attitudes of the students as they came here. They were motivated toward jobs in private industry and so on.
Vaux: Then with the environmental movement in the sixties and seventies, it went back the other way. Now, again, until this very recent depression, there was a thrust in the direction of the private interest.

Lage: It must be interesting for you to observe all these changes.

Vaux: Yes.

Focusing on Forest Economics at UC#

Lage: We haven't got you your MS yet. Did you start concentrating on forest economics in the MS program, or did that come later?

Vaux: It came toward the end of my MS program. Again, the choice of forest economics as the area of focus was not at all based on rational, hard-headed thinking. It was based on a very simple matter. I was eager to get as much practical experience as I could, because I felt very highly academic and impractical because of my lack of any kind of worldly experience. I was anxious for a research assistantship while I was a student as a way of getting a little hands-on feel for at least some aspect of forestry. Research assistantships were readily obtainable at that time because, again, it was the Depression, and federal subventions for this kind of thing were pretty numerous. So there were assistantships going around.

I had the opportunity to choose between two. One was an assistantship that actually had me working in what was then the California Forest and Range Experiment Station, in the forest inventory work, which was part of the Forest Service's forest economics thing. The other alternative was an assistantship in forest influences.

I was very indeterminate right up until the last moment, and I can't even remember now what caused me to take the forest economics thing rather than the forest influences thing. It was sort of a toss-up in a way.

Lage: The way life proceeds.

Vaux: Yes. Very circumstantial. Then once I got started, I found myself intellectually interested in economics, particularly as I got into more advanced courses in economics.

Lage: Now when would that have been? Before 1935?
Vaux: That would have been in 1934, probably the spring semester of '34. I'd been there about a year.

Lage: And who was the guiding light in forest economics at that time? [H.R.] Josephson hadn't become a professor yet.

Vaux: No, Josephson was still working on his degree, actually. That's how I first met Josephson; we were both living at International House at the time.

The guiding light in forest economics was Professor Krueger. Professor Krueger--I think his interview, that perhaps you did, bears this out--I don't think considered himself a forest economist. He considered himself a logging engineer. But he had taken a year off and deliberately gone back to Harvard and studied at Harvard under John D. Black, who was an agricultural economist at Harvard. He had learned some production economics which tied in well with his logging. Because he was closer to an economist than anybody else on the faculty, he sort of sheltered those who were interested in economics under his wing.

Lage: It was striking that he did not see himself as an economist. He felt that he didn't totally benefit from the experience with John D. Black.

Vaux: That's understandable because Black was an independent character, and while Black had a little perception of forestry, he had a perception of it in terms of farm woodlots in New England, as adjuncts to farming operations. Black as an agricultural economist was primarily concerned with farming. That really didn't have much at all to do with forestry on the Pacific Coast, which was an industrial, production-oriented, large ownership thing, or else a government enterprise, one or the other.

One can see why Krueger didn't get too much out of Black, but he got something. It reflected in his courses, and Krueger ran seminars that he tried to give economic content to. He would do that by picking out a substantial book in economics and then make the students in the seminar interpret the significance of that book for forestry as we understood it. It was a reasonable way to handle the problem, where Krueger didn't have the depth of background that would permit him to generate a lot of thinking himself. He could be skillful in a joint enterprise with the students in working together.

Lage: He didn't have the books on forest economics.

Vaux: No, there were not books on forest economics.

Lage: You had to be creative in applying economics to forestry.
Vaux: Yes.

Lage: Did you take economics courses at that stage, or was it later?

Vaux: No, I took economics courses right from the beginning. As I said, I managed to get through four years of college without ever having been exposed to any economics, so one of the first courses I took was Econ IA-B, and then I moved on to the regular upper division courses in economics and--to some degree--in ag econ [agricultural economics], although most of the undergraduate economics courses I took were in the department of economics.

Then I took graduate courses both in the department of economics and the department of ag econ.

Lage: Was the ag econ here any more relevant to forestry?

Vaux: The ag econ courses were aimed at students going into agriculture. They emphasized principles of production economics, marketing of agriculture products, and research methods, with examples and case studies drawn entirely from agriculture. The principles were all relevant to forestry, but it was not always easy to transfer them to the forestry context. Also, the agricultural economists didn't stress very much the kinds of problems associated with the very long time periods involved in forest growth, in contrast to the shorter time horizon for most agricultural products.

After I finished my master's degree in December of 1935, I stayed one more semester and worked on advanced courses then.

Lage: Thinking of going on to the Ph.D. at that time?

Vaux: Yes. Thinking about it as an ultimate objective, although I knew that I would not stay more than that one semester then. But December is not a good time to get a job in forestry, and it made sense to continue on through the spring.

I didn't come back until 1940. So there was a four-year lapse there, essentially, and by the time I came back, Josephson was on the staff and gave me a great deal of guidance and help in bridging the gap between the theory in ag econ and econ, and forestry.

Lage: And this again must have been something that he pieced together, solely on his own.

Vaux: Yes. Now I didn't piece this all together on my own, but a very important part of my education took place when I went to teach at Oregon State in Corvallis in 1937.
Employment at Crown-Willamette

Lage: Well, let's move into that, and then we'll come back to your getting your Ph.D. First, you went to Crown-Willamette Paper Company.

Vaux: Fascinating experience. I went there because of my interest in economics. I thought some kind of industrial experience would be useful. One of Krueger's earlier students was a man named Harold P. Miller, who was the logging engineer for the Crown-Willamette Paper Company. Through Krueger's good offices, I was offered a job as a surveyor with the Crown-Willamette Paper Company. It had operations in northwest Oregon and southwest Washington. I started out cutting brush and mapping and eventually running transit—locating railroad lines—this sort of thing. This was still a traditional logging operation, where the major transportation was done on a logging railroad. It was before the days where trucks and tractors were widely used, at least in the coast range of the Northwest.

It was an extremely interesting experience personally, because I had never lived in anything like a logging camp before. That was quite a contrast to my home environment in Philadelphia.

Lage: You did get out of the Philadelphia environment.

Vaux: Yes. It was memorable in the sense of working in the last remnants—and they weren't remnants, they were tens of thousands of acres of virgin Douglas fir forest, which doesn't exist any more. It was a very worthwhile experience from the standpoint of giving me some sense of the realities of hard work, and what it was like to thrash around all day in the pouring rain and try and keep your map paper dry and that sort of thing.

During that interim I was married, in 1937, to Jean Macduff. I took my bride to a house on skids in a logging camp in southwest Washington.

Lage: Had she been somebody you met in California?

Vaux: Yes. She came from San Mateo.
Influence of Earl G. Mason at Oregon State

Vaux: That job only lasted for me about a year and a half. Then I got a chance to go to Oregon State to teach. That was a very interesting experience. I was hired about a week before the quarter began. I had never done any teaching. I'd never been a teaching assistant here or had any experience teaching. I was a very insecure person and was scared to death. And I suppose I must have been probably the worst teacher that ever was given a chance to lecture to a class. It was just awful. And, I think, probably almost worse for me than it was for the students. It was a very trying time.

Lage: Why did they hire you? What were they looking for?

Vaux: They were looking for somebody with a background in forest economics. I had done well as a student, and so I had good recommendations from the faculty here. But nobody had ever tested me, least of all myself, in a teaching capacity, and while I know the academic assumption is that if you know your subject matter you can just go up and teach, I also know from my own experience that that just ain't so. It's a very different matter.

At the end of the first quarter, I knew I just couldn't go on this way. I realized I had to do something about it. The thing that came to my rescue, again, is sort of a trivial kind of thing. As an undergraduate in college, I had engaged in theatricals. I was a member of the college drama society. It was an all male college at that time, and so, as such things go, one of the first roles I played in the drama club was a female role. I don't know whether you ever saw a play called The Queen's Husband. It was a Philip Barry play that was prominent in the thirties and was a parody of Queen Marie of Romania. So my first role was the queen in The Queen's Husband.

I suddenly realized, during this trying time at Corvallis, well, if you can play the role of a queen, you ought to be able to play the role of a college professor. I decided to try the technique of playing the role. Psychologically there was something there, and I could get over all this lack of self-confidence and so on simply by playing the role. That, at least, solved the grossest problems that I had in learning how to teach. From there on, things were a good deal more smooth for me.

What this is leading up to, really, is to talk about a man named Earl G. Mason, who was dean of the forestry school at Oregon State College at that time. He hired me. He was a very controversial figure at Oregon State, and many of the students disliked him; many of the
Vaux: alumni disliked him. His deanship at Oregon State was not one that would appear in the record as a highly successful one. But he just did wonderful things for me in two regards: he had tremendous patience with me; even though he knew I wasn't doing a good job as teacher, he was willing to give me time to work it out. I think I did work it out to his satisfaction eventually. But I always felt indebted to him because he gave me the time, and he gave me the patience, and a certain amount of sympathetic treatment that enabled me to get over that hurdle.

But equally important, Mason had had some training in forest economics. He had been at the forestry school at Yale for some graduate work, and I think his master's degree there was in forest economics. He taught a course in forest economics that in many ways was much more modern forest economics than anything that I had been exposed to in Berkeley. I came in to Corvallis primarily as assistant to Mason in teaching his courses. After the first year I began to take over the courses myself.

But Mason, intellectually, gave me a tremendous amount in bridging the economics that I got out of the ag econ courses and the economics courses over to the application to forestry. Actually, he had written a syllabus for use in his own courses that for the first time put a lot of this stuff in a coherent perspective.

Lage: Did that encourage you to go on?

Vaux: Yes. I had already determined that that's where I was going, but his contribution would make sense of a lot of it to me, where previously I understood the stuff intellectually, but had a hard time understanding its real meaning in terms of the forestry context.

Lage: Where did you say he trained? Yale?

Vaux: Well, he was a graduate of Oregon State; he was an Oregonian. He took a master's degree at Yale.

Lage: Do you know who his teachers were there?

Vaux: Well, he would have been at Yale at a time when Yale had no recognized forest economists. [H.H.] Chapman was the leader in forest management there, and a dominant figure. Henry Graves, who was a former chief of the Forest Service and therefore had a very broad comprehension of forestry, was the dean at Yale.
Vaux: I think Mason took economics courses and then bridged the gap for himself. He was a smart man. I think he should have some credit because, as I say, he was a controversial character, and his temperament wasn't always easy to get along with. But I think he deserves more credit than he's gotten for this kind of intellectual contribution.

Lage: Would he have published in this field, or would this contribution have come through influencing you and then perhaps others?

Vaux: Yes, I think his contribution would have come through influencing people like me, although it's unfortunate--his influence would have been a lot greater, but for personality reasons apparently a lot of people couldn't get along with him. I always got along with him fine, for whatever reason I don't know. But a good many other people seemed to find him abrasive.

He had a characteristic way of teaching that put a lot of people off. He would pose unanswered questions, and then keep coming back to these. Some people just can't stand that. They want to know the answer, and they get terribly frustrated. That style of teaching intrigued me, and I responded to it positively. But a lot of people don't.

Lage: You took a leave from Oregon State.

Vaux: I took a leave for a year to come back to Berkeley in academic year 1940-41 and took sufficient additional coursework to arrive at a state where I passed my oral qualifying exams in the fall of 1941. Then I went back to Oregon State.

Land Ownership Studies in Louisiana

Lage: And then you went to Louisiana.

Vaux: Then I went to Louisiana. That change occurred because I had been at Oregon State for five years. Salaries were low, very low. I got an opportunity to go to Louisiana on a full-time research job--there was no research component to speak of in my work at Oregon State--at a salary that was substantially greater than what I was earning at Oregon State, almost double. Oregon State wasn't in a position to come close to matching it. So I decided to leave.

Of course, things were unsettled anyway. It was three months after Pearl Harbor, I guess, that these negotiations started. And, apart from the salary thing, it was clear at the time that the South was an area
Vaux: of major forestry interest and major forestry importance. It seemed like a good idea to get some experience in the South as well as the Pacific Northwest.

Lage: And that was a Forest Service job.

Vaux: No, it was with, technically, the Louisiana State Agricultural Experiment Station. Actually, it was the forestry school at Louisiana State University. The location of the forestry school was in Baton Rouge, Louisiana, where the university is. But actually, because the job was field research, my headquarters was Shreveport, Louisiana, and we lived there.

Lage: What kind of work were you doing there?

Vaux: This was an analysis of forest land ownership in Louisiana. It's always been recognized that the ownership of land—who owns the land, and what their economic and cultural and other circumstances are—is important for what happens in management. There was very little known about who actually owned the land then. In the late thirties and throughout the 1940s, there was quite a spate of these research studies to find out who owned the land, why, what they were doing with it, why not, and this kind of thing.

So this was an analysis of private land ownership in north Louisiana. From the forestry standpoint, Louisiana breaks into a loblolly-shortleaf pine type and a longleaf pine type. Because of the botanical differences between those two species of trees, the forestry problems are quite different in the two parts of the state. This study was confined to the northern part of the state.

I worked there under the direct aegis of Professor A.D. Folweiler, who was a Pennsylvania Dutchman. He came from Penn State. He was a forest economist and subsequently became the state forester for the state of Texas.

Lage: Was this related at all to your later work, or to your Ph.D. work? Doesn't seem like it's in the same field.

Vaux: On the contrary, it was a good, basic, foundation study for anybody involved in forest economics because the research methods and the design of the project—going out and interviewing people—these were all techniques that would be general and weren't just limited to ownership.

Lage: Was there a group of people working on this?
Vaux: It was small. Folweiler was the head of the project, but he was teaching at Baton Rouge, so his role was a supervisory one in seeing to it we did things correctly.

I was the senior full-time person on the project. I had one full-time assistant and at various times one to three part-time field assistants. Essentially, two of us really ran the project.

Wartime Work

Lage: For a year's time. And then--the war years intervened.

Vaux: Yes. I first got involved in the war thing--Professor Barr, whom I mentioned before, was a veteran of the Canadian Air Force from World War I. Before we got involved in World War II, he apparently saw that war coming. He volunteered and became commissioned in the U.S. Air Force sometime in 1941 before we ever got in the war. He became a colonel fairly rapidly.

Vaux: In the spring of 1943, Colonel Barr had a responsible position in the Army Air Force headquarters in Washington, D.C., concerned with economic intelligence questions. He was recruiting for that organization in Washington. They were using not only military personnel but were also recruiting people who worked as civilians in civil service positions on the same thing. He recruited both Josephson and me for this unit of air intelligence.

My motives in going there were primarily the pressures that not being involved directly in the war effort placed on a person at that time. That was an interesting sort of decision. As I mentioned earlier, I had been brought up, and still am, a Quaker. I had been heavily influenced by Quaker peace testimony in terms that are not unfamiliar as a more general phenomenon today.

So the question of my relationship to the war effort wasn't a simple one in my own mind. But once I had resolved that, then it became personally important to me to do something, and this was a way of doing it.

Lage: You weren't enlisted. This was as a civilian?

Vaux: I was a civilian.
Lage: Did you never get called up?

Vaux: I stayed a year in the Air Force intelligence. I was subject to the draft, and I began to get uneasy that I might be drafted. I didn't like the prospect of that very much for a variety of reasons. So in the fall of 1943 I applied for a commission in the Naval Reserve and was so commissioned. One never looks back. Let me just say that in my view, I spent my three years in the Navy as a commissioned officer assigned to the Hydrographic Office just outside Washington. I think my naval service can best be summed up by saying that I relieved a WAVE for active duty.

Lage: You didn't continue with intelligence?

Vaux: Actually my assignment at the Hydrographic Office was a sort of air intelligence thing, of a different kind. That was the nominal linkage. But I doubt that I made very much contribution to the war effort.

Lage: Were the Quaker beliefs contrary to doing this kind of work also?

Vaux: The whole business of avoiding military involvement is a central tenet in the Quaker religion, but the Quaker religion is an unusual one in the sense that it is a highly individualistic thing. While there are established beliefs and tenets in the Quaker faith, the first and foremost of them is that religion is a matter between the individual and God. So there's great tolerance for individual deviance.

To indicate the nature of the problem, in World War II, despite the long Quaker tradition of non-involvement in war, and peace testimony, as the Quakers call it, and despite the fact that as a student at Haverford we all took the so-called Oxford oath*—many of us were in active military service.

When World War II came along (I happened to be a member of Haverford Meeting, which is a Quaker meeting just outside Philadelphia), the people of draftable age at that meeting were almost evenly divided between those who were conscientious objectors and either took alternative service or went to jail, and those who participated in some way in the military effort. I think the striking thing is that nobody waited to be drafted. You either volunteered or were a conscientious objector.

*The Oxford oath was a pacifist resolution of the Students' Union at Oxford University in 1933. Those who took the oath vowed not to participate in war.
Lage: And they were unusually tolerant toward each other?

Vaux: Yes. And the meeting was extremely sympathetic. I would get friendly letters all during the time I was in the military. There was no sense of recrimination against people on that score. That was the tradition in World War I, too.

Forest Service Encouragement of Training in Economics

Lage: After the war, you worked for the Forest Service.

Vaux: After the war, I worked for the Forest Service, and that was an arranged thing with Ed Crafts, who at that time was the head of the Division of Forest Economics Research in the Forest Service. Josephson was his deputy at that time. I don't know how much of this was Crafts and how much was Josephson. I knew them both because Crafts had been in the California Forest and Range Experiment Station as a forest economist when I was here in 1940-41.

Josephson and I would have lunch together every day to talk about forest economics. On a number of occasions Crafts would join us, so--a triumvirate.

They arranged for me to be employed by the Forest Service after I got out of the Navy and while I was still in Washington. But the understanding was that at the end of six months, I would be transferred back to the Forest Experiment Station here in Berkeley and given an assignment that would at least relate in some way to my dissertation, which at that time I felt I had to get written right now.

I'd had my qualifying exams in the fall of 1941, and here it was five years later. I hadn't even started a dissertation.

Lage: Would your choice of dissertation be determined by what the Forest Service needed, or by your own choice?

Vaux: Let's say I was able to generate a satisfactory thesis topic that was related to the work I was doing for the Forest Service. It's not necessarily something I would have chosen myself, but it was something that was close enough to my interests, so there was no problem for me in adapting a dissertation topic out of the work I was doing for the Forest Service.
Lage: There was a very close interrelationship, it seems, between the experiment station and the university.

Vaux: Yes.

Lage: Were they particularly trying to get forest economists trained?

Vaux: That was one of the Forest Service's objectives, yes.

Lage: Was there any hope that then you would go into the Forest Service, or wasn't that their concern?

Vaux: I think the Forest Service was fairly broadminded about it, in the sense that they probably hoped that these people would go into the Forest Service, but at the same time they faced a long-term and increasing need for forest economists. So if they sponsored someone who then went back into the academic community and began to turn out more of the same kind of people, the benefits for the Forest Service may have been a little bit delayed in some sense, but it was still to their advantage.

Lage: So they must have played quite a role in promoting the discipline.

Vaux: Well, they did, and I don't think it was just in forest economics. It was in other disciplines as well.

The Ph.D. at Berkeley: Professor Leo Rogin's Impact

Lage: Back to Berkeley and your Ph.D. dissertation. Should we talk more about the professors whom you studied with? You mentioned Leo Rogin in economics. I wanted you to tell about him, and any others.

Vaux: I not only had the good fortune to be exposed to that strong faculty in forestry, but there was also a remarkable faculty in economics and Ag Econ. These people I was exposed to mainly in 1940-41, when I came back for that year of residence. That was spent pretty intensively in graduate courses in the Economics Department and Ag Econ Department.

The outstanding figures that I remember then in the Economics Department—I took a course in interregional trade from E.T. Grether, who later became the dean of the School of Business Administration and is still around the faculty club from time to time. I see him occasionally. He has a forest property up in Montana; we talk about forestry every now and then.
Vaux: Actually, I took more course work from two other professors. One was Professor Howard Ellis, who's also still in Berkeley and I see from time to time, very pleasantly. I took my main courses in advanced theory from Ellis. He was a wonderful teacher and made a profound impression on me.

But I suppose, because of his personality and his subject matter, the individual in the Economics Department who made the biggest impression on me was Leo Rogin, who taught the history of economic thought, a subject that has fallen into some unfashionableness now, and unfortunately I think it isn't taught very much these days. But Rogin taught a magnificent course that traced the development of ideas in economics in an extremely interesting and intellectually sophisticated way.

Rogin's lectures I can only describe as pyrotechnic in an intellectual sense. He had an ability to speak in connected sentences, without ever hesitating for a word, that would just flow on and on. He coupled that with an intellectual gymnastic ability that I've never seen the like of, because he would take off on a topic without any guide or notes or anything else and build from one idea to another idea to another idea to another idea, across vast areas of knowledge, not just economics, but history and everything else. He'd build this air castle of ideas until you're almost ready to scream because of the strain and force it put on you.

And all of a sudden he'd stop and say, "Well, enough! A fifteen-minute digression. Now we'll go back." And start off on another theme.

Lage: Was this a lecture class? How large was it?

Vaux: It was a graduate seminar with about forty students in it, and he handled it as a lecture class, because that was the most effective thing Rogin could do. He had a smaller seminar that I took, too, but it was a more conventional seminar.

That course left a lasting impression on me because of Rogin's personality and because of his subject matter and way of presenting it that was intellectual stuff at a very fundamental level.

Lage: Is it something that ties into our topic? Did it make an impression on your thinking about forest economics?

Vaux: Yes, because it conditioned my thinking about the meaning of economics. Rogin was basically a Marxist, but his intellectual power totally overwhelmed his Marxism. He gave me the strong idea that, in economics,
Vaux: theory comes out as a response to a particular problem. What Adam Smith came out with by the way of fundamental economic theory was a response to the real world problems of mercantilism and so on, as they appeared in 1776.

Ricardo and Marx and all the other great economists were developing theories that were responsive to the particular practical problems of their day. That's a somewhat different view from thinking about theory that's somehow justified in some fundamental, axiomatic, intellectual terms, which I think is the way orthodox economic theory is often presented: Here are the postulates; the postulates are reasonable; therefore, everything else follows.

Now, if you think about it in a much more relativistic sense, that this theory simply responds to a particular problem at a particular time, it give you a different view about economic theory, how it should be used, and so on. I think in that sense Rogin changed my thinking very, very much.

Lage: And that's something that might have persisted as you've gone through your career?

Vaux: Oh, yes. Very much so.

Lage: Now, if there's some way, as we go along, that you can show us how this happened, it would be particularly interesting. Or, an example now.

Vaux: This may be too crude for your purpose, but we spoke earlier of the individualist versus the social concept of forestry. There is a school in forest economics, as there is in less restricted economic thought, of the free market and free market enterprise as representing the best way of resolving problems of choice in the use of resources. The argument that is usually made in support of that view is on the ground that if you have a free market—a competitive market—then the results that you get from the operation of that market will optimize the use of resources. A great many people are profoundly convinced that that's true. As a logical proposition, and if you take the assumptions that the free market construct properly makes, then it is logically true.

The real question at issue is, does the real world operate like a free market or does real institutional structure fall short of that in some regard? I think I'm much more keen to examine the question of whether the real world conforms, whereas an economist of the individualist school is much more concerned to defend the proposition that the real world does conform.
Vaux: Earlier,* you questioned whether the Louisiana law ownership study I did in 1942 was related to the focus of other work I've done in forest economics. It illustrates this point very well. The ownership study documented the size and number of ownerships, whether or not the owners responded to market incentives in managing their land, and similar sorts of ownership characteristics that indicated whether or not the markets for forest land, standing timber, and forest capital conformed reasonably well to some of the assumptions that economic theory makes about markets. Broadly speaking, each of those markets in Louisiana showed very substantial departures from the conventional free market assumptions. The individualist school tends to deny that such departures are really very significant for the problems they are interested in.

Lage: Are they working more in the abstract, rather than looking at the realities?

Vaux: I think it's a matter of judgment. Some people see these departures as more significant than other people do.

Lage: Are there leading people in economics that identify with that individualist school? You mentioned the University of Washington.

Vaux: Yes. Barney Dowdle at the University of Washington would be one.

Lage: Is he in your generation?

Vaux: Barney's maybe ten years younger than I am, I would say, fifteen years perhaps. No, he's not in my generation.

There certainly was nobody as avowed an exponent of that individualistic view in my generation, that I can think of, as Barney Dowdle is today and as some others are today. There's a whole school of these people. There are some of them in Montana. I can't give you their names offhand.

Professors Benedict, Wellman, Hoos, and Kuznets in Agricultural Economics

Lage: Are there other things we should say about your Ph.D. program?

*See page 16.
Vaux: We talked about people in the economics department; we should talk about people in the ag econ department. There the chairman of my qualifying examination committee was M.R. Benedict. He, too, was a remarkable man, and he did something to sharpen my interest in policy, because Benedict was most interested in agricultural policy. So I gained from him some sense of what the study of policy was all about and some sense of how economics could be used to analyze policy problems. In addition to his competence as an agricultural economist and policy analyst, he was a very fine gentleman.

Professor Harry [R.] Wellman was chairman of my dissertation committee. He was always helpful and encouraging. At a later date, he was the one who offered me the post of dean of the Forestry School.

Lage: He was ag econ also?

Vaux: He was a professor of ag econ. Later on he became director of the Giannini Foundation for Agricultural Economics, vice-president for agricultural sciences, executive vice-president of the university and acting president. So he had quite a distinguished career.

Lage: And he's still active.

Vaux: He's still around, yes. He still bowls, and I believe is active in certain fund raising matters. A marvelous person.

The other people that I would make note of were Sidney Hoos and George Kuznets who were young associate professors in the department about 1947 when I was doing my dissertation. Hoos was on my dissertation committee. Wellman was so busy that Hoos kind of gave me the real detailed supervision, and I'll always be indebted to Sidney for that. He unfortunately died a few years ago, very tragically. Kuznets taught me advance statistical methods, which were subsequently very useful in my research.

There were others in the ag econ group that I had peripheral contact with. That was a remarkably strong group of people. Of the academic departments that I was primarily exposed to as a student--I was fortunate in that at the particular time I was there all three had very strong faculty.
Bringing Economics to Bear on Forest Production Goals

Lage: Your dissertation was on consumption--

Vaux: Consumption requirements for lumber used in housing in California. It was predictive in a sense. It was more than predictive though, because at that time the Forest Service had been making periodic studies of the adequacy of the forests. The concept that they were using was to figure out what the future requirements for wood were, and then you could tell whether you were headed in the right direction to have enough wood to meet these future requirements.

So that's why the Forest Service permitted me to make a study that had some relationship to my Ph.D. Now, the linkage here is that in our opinion at that time, the Forest Service's notion of requirements was a totally inadequate concept to analyze the policy problems that they were trying to use it to analyze.

So, although while I was working for the Forest Service the work was tied to the requirements notion, the basic purpose of my analysis was essentially critical and an attempt to develop something better than the old requirements concept as a guide to forest policy.

Lage: To develop a better way of finding lumber requirements.

Vaux: Yes. A better model of how you ought to set a policy toward it.

Lage: Not just find the requirements, but...

Vaux: See, the terminology gets very awkward here. I don't know if you want to go into the full discourse on this at this moment, but the Forest Service requirements notion--what they called requirements--was an absolute amount of wood: you were going to need umpteen billion board feet of wood in the year 2000 to build houses. That runs counter to any sort of economic analysis, because you don't need an absolute amount of anything. How much you need depends on what the price is.

Lage: So they were using concepts that really didn't bring economic theory to bear.

Vaux: We were trying to develop a model and then sell it to the Forest Service that would show an economic concept in terms of a supply and demand analysis that would produce an equilibrium target--an economic equilibrium target.
Lage: I talked to Josephson about the growth goal analysis and the Timber Resources Review. Is this story leading up to that?

Vaux: Yes.

Lage: It had quite a history, then, the attempt to introduce this economic analysis.

Vaux: In a way, my doctor's dissertation was simply a first step and the answer didn't come out there. My answer came out in a paper I wrote that was published in the Journal of Forestry in 1949, called "Some Economic Goals in Forest Policy."* That was written a year after I got my Ph.D. That sort of put together what I had arrived at in thinking about this thing during the years that I was working on my dissertation, but wasn't really embodied in the dissertation itself.

Lage: The dissertation would have been a first step?

Vaux: The dissertation was the sort of mechanical and empirical work that had to be done to provide the Forest Service with certain hard information that they wanted. But the theoretical outgrowth came out in that Journal of Forestry article. Then, three years later, in 1952, Zivnuska took essentially the same ideas that were in this Journal of Forestry article and wrote them up in much more elegant and formal economic terms. My Journal of Forestry article had not been in rigorous economic terms; it had been in sort of the general language that foresters would understand as to how these economic processes would work and how you should formulate an economic objective for public forest policy. But it was essentially in foresters' language, not economists' language.

Zivnuska did a beautiful job of putting the whole thing in rigorous economic terms. Then he brought that to me. I've always thought highly of John Zivnuska's character. This is only one of the reasons why I've always had the highest regard for him. I think Zivnuska would have been perfectly justified in never even showing it to me and going and publishing it on his own. Instead, he came and discussed it with me and said he felt a little uncomfortable about publishing it on his own, and what did I think about it?

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**See Appendix A for a complete listing of Vaux's publications and curriculum vitae.**
Vaux: I said, "Why don't I write out an historical introduction of how this work relates to the work the Forest Service is doing in requirements," which he really hadn't been involved in and which didn't appear in the draft he wrote. "And then we'd publish it as a joint article." At any rate, that's how that article came about.* It really, conceptually, put in hard economic terminology what I had put in more general terms in the 1949 article.

That's where the growth goal concept got its definitive formulation.

Lage: John Zivnuska was a student while you were, or was he?

Vaux: No. When I was here in 1940-41, John Zivnuska was kind of a madman who was working on a master's degree. I saw him only once or twice.

Lage: Why do you say "a madman"?

Vaux: Because John was a very uninhibited person as an undergraduate student, and he would speak in a loud voice. I sat in an office with Keith Arnold, and Keith Arnold and John Zivnuska knew each other quite well. John would come raging in on something while I was trying to study. Then he went off to the Border Patrol. I didn't really meet John until the beginning of 1948, while I was still working for the Forest Service. John came back to Berkeley as a member of the faculty. So my first contact with him was really when I, six months later, joined the faculty, and he was already established on the faculty, teaching a course in forest economics.

Changing of the Guard on the UC Forestry Faculty

Lage: Anyone else that we have failed to mention that we should from this early period at Berkeley? I had a question about whether there were changes that you noted during the period of your graduate career. Mulford left by '48, and the Forestry Division was now the School of Forestry.

Vaux: You see, by the time I came back from war service--remember, I was working for the Forest Service in '46. Even though I was a registered student, I was simply registered for dissertation purposes. I didn't

Vaux: take any courses. So while some changes had taken place, they didn't impact on me particularly. When I came back on the faculty, the changing of the guard in the forestry faculty was just beginning.

Foresters, in terms of forest management, always talk about a normally regulated forest. Do you know what a normally regulated forest is? Well, it's a managed forest where you have each age class properly represented. If you're managing a forest on a fifty year rotation, then you'll have an equal acreage of trees fifty years old, forty-nine years old, forty-eight years old, forty-seven years old, forty-six years old. With all of this very elegant normal forest concept, the forestry school always violates that terribly in the age class of its faculty, because the first faculty was really recruited in the early 1920s. Then by the late forties and early fifties, all those people were going to retire within about a five-year period. Mulford was simply the first to go.

Zivnuska and I, and Bob [Robert N.] Colwell, were sort of the new recruits for the second generation faculty. When I came back on the faculty, Krueger and Baker and Sampson and Barr—I can't remember who else we should have mentioned—all of those people, except Mulford, were still active on the staff. So we were kind of the Young Turks.

Lage: You were quite a bit younger.

Vaux: Yes. We were very much the Young Turks.

Lage: And former students.

I think we've covered enough today, unless there's something that you want...

Vaux: I'll just tell you one incident for fun. It bears because one of the important things about the forestry school, when I was there as a student, when I came back, and all during the time I was dean, was the women who held the post of administrative assistant. There were two remarkable women.

Lage: They must have been the only women around.

Vaux: They weren't the only women, but they played a powerful role. The first one was Miss [Reid] Venable. Miss Venable was the administrative assistant when I was a student. She mother-henned everybody, and was a revered creature in the eyes of all the old forestry school grads.
Vaux: Miss Venable was still the administrative assistant when I came back on the faculty. That worked fine. Of course, as you probably know, the forestry school has always had a first name convention. The students call the faculty members by their first names; everybody calls each other by their first names.

This incident has very much to do with this requirements subject because, along about 1952, I guess it was, the Weyerhaeuser Company gave Stanford Research Institute, as it then was, a big contract to make a study of the long-term demand for wood. In other words, wood requirements. Apparently, the Stanford economists took a look at this and thought it would be just a conventional study and suddenly found out that it wasn't. There were a lot of things they needed to find out about the peculiarities of the wood market. Somebody tipped them off that a couple of people over in Berkeley knew something about this.

So the man in charge of the project at the Stanford Research Institute came over to have a talk with Zivnuska and me about the wood requirements study. Could we help them, and so on.

We were sitting in my office, the three of us, having this profound discussion. We were just reaching the point where we were discussing whether the consulting fees would be $150 a day or more or less. Of course, in those days, $150 a day was unheard of.

The communications arrangements in the forestry department at that time were somewhat primitive. I think there was one telephone on each floor, and then there were what we called squawk boxes. The secretarial force had a box that they could speak into, and then there was a thing in your office that you could talk in. So if there's a phone call for you, you would be summoned on this squawk box, and then you'd go to the telephone on the floor and take the phone call.

At this particular juncture, our son was at the age where he did a paper route. He was supposed to go and do that every afternoon. He'd been careless on his bicycle, and wasn't looking where he was going and hit a curb, went head over shoulders and broke his arm. So there was a period of about a week when he couldn't do the paper route, so I was pinch-hitting on the paper route.

So John and I were sitting there talking to this SRI man about consulting fees, and, without any preamble at all, the squawk box behind me opened up. Miss Venable's voice came through loud and clear: "Henry, it's time for you to go and do your paper route!"

Lage: That's marvelous! How did you carry that off?

Vaux: Well, we just all broke up with that.
Lage: I wonder how much came off your consulting fee.

Vaux: As it turned out, John Zivnuska did the consulting.

Lage: And you did the paper route.

Vaux: I did the paper route, yes.

Lage: Oh, that's a wonderful story.

Further Thoughts on Choosing Forestry as a Career#

Lage: This is the second interview with Henry Vaux on the forest economics study. Last time, we had talked about early influences, and you mentioned on the phone to me that you wanted to add to that.

Vaux: Yes. There are two items I'd like to add to that. First of all, I think I gave the impression that I pretty much drifted into forestry as a career. I think that drift was conditioned by some additional factors that I didn't mention last time. Probably the most significant of those was that the influence of family tradition was quite apparent in the household in which I grew up. I won't say that it was weighty necessarily, but it was very, very manifest. I think I can probably suggest the tone of it by saying that my older brother's legal name was George Vaux X, signifying that he was the tenth generation of George Vauxes that bore the same name in succession. And my name was Henry James Vaux; I was named for my mother's grandfather, who was a man who is now known as Henry James the Elder, and was the father of William James, the psychologist, and Henry James, the novelist. They were my mother's uncles.

She was the daughter of Robertson James, who was one of two younger sons, both of whom took part in the Civil War at a very early age. My grandfather enlisted in the Union army when he was sixteen years old and spent the war as a commissioned officer in a regiment of Negro troops. That pretty well did him in, psychologically and in other ways, for the rest of his life, so that he had a very severe struggle in contrast to these brilliant siblings of his.

I don't want to overstress this, except that I'm quite clear in my own mind that in high school and particularly in college I felt a great need to establish my own identity, independently of either the James family or the Vaux family. I'm sure picking forestry filled that
Vaux: bill quite well because nothing could be much further from either the Vaux tradition or the James tradition than forestry was in a whole variety of ways, geographically and otherwise.

Lage: But you had the uncle, or a cousin, who was a forester?

Vaux: Yes, but he wasn't a Vaux. He was a Wilson.

Lage: An uncle by marriage?

Vaux: No, he was my father's second cousin. I guess he had Vaux blood in him, but I never identified with him particularly as part of the family tradition. He, in fact, had sort of broken away from it at a much earlier time.

The second thing I mention because I think it had something to do with my lifetime viewpoints on economics and policy and that sort of thing. I got to thinking about it after we had talked, and it became perhaps more apparent to me then than it ever had been previously. I grew up in Pennsylvania in the 1920s and early thirties, when Gifford Pinchot was the leading political figure in state politics in Pennsylvania. He ran, successfully, twice for governor and once, unsuccessfully, for the U.S. Senate.

My first exposure, really, to political thought and ideas was to Gifford Pinchot, with his particular brand of Republican, Teddy Roosevelt progressivism and all the things that that meant. I found that very appealing, as a sort of political philosophy. I knew nothing about politics, of course; I was a kid growing up in high school, getting into college. But I found those ideas appealing, particularly at that time--I went into college the month after the Crash of 1929, and I came out of college the month after Franklin Roosevelt was elected. So those four formative years were a period of very great economic turmoil, and my environment in Philadelphia was a pretty depressed place during the Depression.

Pinchotism seemed to me a much more appropriate response to what was going on than what was being done at the time. So I had a very sympathetic awareness of Gifford Pinchot's political thinking from fairly early in my youth because of his role in Pennsylvania politics.

Lage: Was he in Pennsylvania politics after his years with the Forest Service?

Vaux: Yes. He was a Pennsylvanian originally, but as you probably recall, he got fired by Taft as a result of the Ballinger-Pinchot controversy, so called. He then went back to Pennsylvania and became the head of the Department of Forests and Waters in Pennsylvania, and then used that as a stepping-stone to elective office in Pennsylvania politics.
Vaux: As I say, he was certainly the dominant figure in Republican politics in Pennsylvania when I was growing up. The odd thing about this is that during the time when I was deciding to go to forestry school, I never knew that Gifford Pinchot was a forester. But I got some of my sense of political values rather directly from his political campaigns. I can remember sitting down in the library in Giannini Hall and reading some book on the history of forest policy and finding out that Gifford Pinchot was a forester. This just blew my mind because then I perceived all these, general political values, that I had absorbed sort of by osmosis, reading the papers about Gifford Pinchot as a governor and a senator, or would-be senator—I all of a sudden saw these as all embodied in the concept of forestry.

I think my general political philosophy is still nostalgic, unreconstructed, Bull Moose Republican.

Lage: But who's around to be your leader?

Vaux: Well, that's a sad question; we'd better not discuss it.

We touched a little bit last time about public interest values versus private values. I'm sure I came into forestry already convinced of the Pinchot idea of the public interest values in forestry—always felt that way. And then my two parents were both of them extremely active in volunteer work to help the underprivileged. My father was the treasurer of practically every substantial do-good organization in Philadelphia: to help blacks, help American Indians, all kinds of social service things. That was a lot of our daily conversation: what they were doing in those things.

Lage: This was the beginning of the twenties.

Vaux: That was during the twenties, yes.

Lage: Was this as a Republican?

Vaux: Yes. Why, of course, an old Philadelphia family, what else could he be?

Well, it was an interesting mixture. I don't want to dwell on this too much; it really was an interesting mixture. My mother wanted to name me Robertson James Vaux, after her father, whose name was Robertson James. There was a major conflict in family traditions, because several generations back in Philadelphia there had been a Vaux who wasn't George Vaux, he was Roberts Vaux. But he was a Democrat, and he helped Andy Jackson break the Bank of the United States. Here, almost eighty years later, that name was in such family disrepute that I couldn't be named Robertson Vaux because it might be confused with Roberts Vaux.
Lage: That is a great sense of tradition.

Vaux: Yes.

Lage: You had mentioned earlier that one reason you came to California was to get away from this Philadelphia scene. Now you're giving us the fuller picture.

Vaux: Yes. It was more than getting away from the Philadelphia scene. I felt no personal identity at all, except as somebody who was supposed to go out and do something in terms of these family traditions. And I just didn't know how to do that. So I thought the best thing to do was to go some place where I could row my own boat.
II THE COMING OF AGE OF FOREST ECONOMICS: THE EARLY POSTWAR YEARS

Defining the Scope and Method of the Discipline

Lage: I thought we'd turn now to talking about the development of this book that you laid out for us: Research in the Economics of Forestry. I know that the foreword to that book does give some notion of its background.

Vaux: That's pretty straightforward and complete.

Lage: Does it answer the questions relating to the genesis of the idea?

Vaux: Well, so far as I know, the genesis of the idea was Bill [William A.] Duerr. He wrote to me about it first in 1947. I knew him by name, but I had never met him. He laid out this proposal pretty much the way it was ultimately carried out, as far as the general prospectus for it was concerned: what it was supposed to be about and how it would be approached.

There were three of us involved. There were Bill Duerr and Charles Stoddard from Wisconsin. Stoddard dropped out after about the first year. He participated in some of the organization efforts and the selection of topics and the selection of people to write on them, but then I guess he got elected to Congress, so he was no longer involved. There were just the two of us. I think the idea came wholly from Duerr, and I think he talked the Pack Foundation into putting up the money to support it. He also arranged for the entire project to be cosponsored by the Society of American Foresters.

Lage: What stage was he at in his career? Was he a professor at that time?

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Vaux: I think at the time we first corresponded, Duerr was still with the Forest Service, but he had completed his Ph.D. at Harvard in economics. Very early in the game, as far as the book was concerned, he went to Syracuse as a professor. I don't know when he went there; I would have to check his biography to figure out whether it was 1948 or 1950. It was along in there sometime.

Lage: So he was the one who perceived a certain need in the field. I came across an interesting comment about Duerr, I think, a study that Richard Alston did. I believe he refers to the early postwar forest economists as having a messianic message. The practitioners are talked of by Alston as priests and prophets with a "mission."* I sensed a feeling of clannishness. What would he be referring to there?

Vaux: He's talking postwar now.

Lage: Early postwar, I believe.

Vaux: It was a very small group. I think they did talk mostly to each other. That was part of the reason for Duerr's undertaking the scope and method book--these people still hadn't established their own professional identity. You have to remember that at that time there was no such thing, really, as a Ph.D. program in forest economics. All the people of my generation in one way or another, either as Duerr, took economics at Harvard with a dissertation in forestry, or took ag econ at Berkeley or Minnesota with a forestry dissertation. So we'd all come out of three or four years of Ph.D. work talking not to other foresters but to agricultural economists or general economists or whatnot.

It was a perfectly natural period right after the war when everybody was just eager to talk to somebody else who was a forest economist, because most of us had never met one before. It seems to me, as I recall it, a response to that common type of background and environmental circumstance rather than clannishness in a narrower sense. There was clannishness in this sense, I think, that we—all being young punks and having had much more formal economic training than, for example, a Myron Krueger, whom we spoke about last time—we all sort of felt that well, the foresters probably really didn't understand what we were talking about anyway. So we didn't mix, perhaps, as much with them as we would later on and might have then.

Lage: The sense of being missionaries. Does this refer to a feeling that you were...

Vaux: I don't agree with either Duerr or Alston. I don't think it was a strong missionary sense so much as it was that we had the feeling that economics had something to offer forestry that was important from the forest policy side. So we were anxious to help people understand—we were anxious, first of all, to understand ourselves—how to interpret forestry problems in more rigorous economic terms than had been done before that. And then, having accomplished that, we were anxious to share that enlightenment with the other foresters. Maybe this appeared like a missionary zeal, but I wouldn't have chosen that word for it, and I wouldn't have chosen Alston's image, in that same book, of the forest economists as a bunch of revolutionaries who were trying to break down the established field.

I think that's much more characteristic of the conservative forest economists now than it ever was of anybody in our group. I see some guys out there now who, I think, really are trying to knock down the traditional forestry viewpoints. I don't think we were. I think we were unsure about how to harmonize them, or how to understand what those views might mean in economic terms.

Applying Economic Analysis to the Growth Goal Concept

Vaux: I think you would get the flavor of that from one of those articles in my bibliography, because, as I recall, that represented exactly what I was trying to do, which was to take some conventional notions in forestry and forest policy and make sense of them in economic terms. In 1949, I published an article in the Journal of Forestry called "Some Economic Goals in Forest Policy." I'd been doing a lot of work when I was in the Forest Service and subsequently on the so-called growth goal concept. The national plan for American forestry in 1933 and the subsequent report in '39 or '40—the joint congressional committee report—and the new postwar reappraisal of the timber situation had all used the concept of requirements as a basis for national policy. Wood requirements. People would estimate "how much wood we needed," unquote, and then here was a block of wood—we had to have that much wood. So then, in accordance with the sustained yield philosophy, you ought to develop annual growth that would amount to that much wood per year.
Vaux: Ed Crafts was suspicious of that concept, although Ed was not and didn't consider himself a highly trained economist. He had some economic background and was a very analytical sort of person. The requirements concept troubled him. When I had been in Washington and when I was with the Forest Experiment Station here in Berkeley, one of the notions that he encouraged me to think about and try to develop something on was, well, what about this requirements notion? What should requirements be? That 1949 article summed up my thinking about that. You didn't pick out a single volume of wood; you constructed a long-term supply-demand model, and you sought some kind of an equilibrium in the supply and demand outlook. Then that became the goal. It was sensitive to costs and competition, prices, substitutions and all these kinds of things.

Lage: You said that Ed Crafts encouraged you along these lines. I thought he was the one who refused to accept that model. Isn't this what Josephson [in his interview for this project] was saying on the Timber Resources Review—that Ed Crafts wouldn't accept this more sophisticated method?

Vaux: I think that was probably true, too. But Ed Crafts could criticize the existing model and ask for a better one, but then not necessarily accept what I thought. He saw the shortcomings of the other one, but, as I say, I don't think Ed was really an economist. So I don't think he was necessarily prepared to buy an unqualified economic approach. As I would not be now.

Lage: Okay. We'll have to discuss that more.

[Dwight Israelsen joins in the interview.]

Ralph Marquis: A Leader in the Development of Economic Thinking

D.I.: With the exception of Crafts, was there anyone else in the traditional forestry area that perceived any sort of a need for economic analysis in forestry at that time?

Vaux: Oh, sure. When I was just beginning to get my toes wet in the field, Ralph Marquis was probably the leading figure, at least in my mind, because Ralph was an economist, first of all. But then he devoted his entire career to forest economics. He ultimately became an experiment station director, and he wrote the first textbook in economics of forestry and that sort of thing. So Ralph was very much a leader in the development of economic thinking, I'd say, pretty much from 1935 to 1955.
Vaux: He got heavier and heavier into administrative work and functioned less as a forest economist in the latter part of his career--more as an administrator. So I would say he was definitely a leader.

But Ralph faced the problem that he wasn't of the fold. He was an economist, so the foresters looked at him with a very jaundiced eye, and he was smart enough to perceive that and couch the things that he was advocating in very tactful, nonthreatening terms. He wrote a beautiful article in the Journal of Forestry about folklore and bromides.* That's just beautiful, where he took apart the sort of shibboleths of forestry, like sustained yield and these things, and subjected them to good-natured but critical economic analysis. Ralph had a lot of influence.

Lage: Was he working in forest economics—the research branch of the Forest Service?

Vaux: Yes. The other people, I guess, were mostly, one way or another, in the forest taxation inquiry, where they kept their noses pretty much to the forest taxation grindstone. There were some very good economists, but they didn't wander very far afield from the forest taxation context.

Then there was a whole stable of people who did studies on, essentially, the nature of the cost structure in selective logging, and the variations of cost with size of log, size of tree, and interpreting the implications of this for the cost of forest management. There were a number of those people, starting out as early as World War I with a man named W.W. Ashe, who was a forester, not an economist, but who had an absolutely precise and exact analysis in economic terms of the problem. Very brilliant piece of work.

Then he was followed by a lot of other people who were much less sophisticated than he was and who made these applied studies of how much does it cost—there's a whole set of bulletins on logging costs in southern pine, logging costs in western pine, logging costs in Douglas fir, a whole series of these done by a considerable number of people, a number of whom weren't economists and a number of whom, in my opinion, butched it to death. Their models weren't very precise. But those people were around, and they were influential. Among the best of these were Axel Brandstrom and Burt Kirkland of the Forest Service who did some landmark studies on the economics of selection cutting in Douglas fir forests.

Another person who encouraged people to study forest economics was E.I. Kotok, then director of the Forest Services's California Forest and Range Experiment Station in Berkeley. He seemed to recognize and welcome certain kinds of economic approaches.

Increasing Acceptance of Economics in Forestry, 1950s

You point to a certain amount of suspicion from the traditional forester in the way that the traditional forester looked at the forest economists.

Well, sure, because you have to remember that at that time stumpage prices were $2 a thousand, and interest rates were 5 or 6 percent. There was no way that you could show, using conventional profit and loss economics, that an investor was going to make a profit on planting a crop of trees and harvesting it, particularly when we didn't have the inflationary experience that we had later. So you assumed that the price eighty years hence would be the same as the price today. So there was no way.

Foresters intuitively perceived that that was wrong. They didn't know why it was wrong, but they were perfectly right in their intuition that it was wrong. Economists were arguing this--this is the thirties, now, that we're talking about--and so obviously the economists had to be wrong. I think the foresters were quite right.

There wasn't that kind of argument when people my age and Duerr's age came along because, first of all, we tackled some other sorts of problems. Efficiency types of things rather than rate of return types of things. We were able to give some help on those, without the ugly bogey of the 6 percent interest rate for an eighty-year rotation having to be dealt with by anybody. In other words, we weren't talking about land use, we were talking about the efficiency of operations. So the question of the value of the land for forestry purposes was assumed to have already been answered.

So some of the economic ideas at that level began to gain acceptance even before stumpage prices had risen sufficiently so that the economic opportunities in timber growing began to appear really realistic.

So some of the increasing acceptance was that your generation helped solve problems that were helpful.

Yes, I think that's true. That, plus the fact that then stumpage prices got to $10 to $12 a thousand board feet, then there was some opportunity for economical forestry, particularly if you used as an
**Vaux:** interest rate not a straight market 6 percent, but something like the long-term rate of 2½ or 3 percent. Then you could make the numbers come out. That was true, really, from 1950 on.

When I did my sugar pine study, even by that time the numbers were coming out so that with real interest rates of 3 percent you could show positive returns to the land.

**Lage:** Could you determine a date, or an approximation of a date, when forest economists became respected and accepted as part of forestry by people in industry and people in the Forest Service?

**Vaux:** Oh, I don't see how I could put a date on that, because that's sort of like mud oozing through a porous membrane; when does it really get to the other side?

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**Vaux:** You could give some indicators. I told you last time about the Stanford Research people coming over and talking to John Zivnuska and me about their study and what Reid Venable's remark was to the gentlemen from Stanford Research. That was about the fall of 1952. The Weyerhaeuser Company commissioned Stanford Research Institute to make a study of the future demands for wood in North America, I guess it was. As I indicated last time, they came over and talked to us about consulting with them on the job. Eventually John Zivnuska worked with them as a consultant on that study. Certainly for the particular purpose, economists and forest economists were accepted by Weyerhaeuser at that time.

In 1952, when the Timber Resources Review or one of those things came out, the Forest Industries Council, which is one of the trade association arms of the forest products industry, hired John Zivnuska to make an economic critique of the TRR. So, in '50-'52 there was plenty of acceptance by some industry people of the work of some forest economists in some contexts. But that doesn't mean that all industry people accepted all forest economists in all contexts. That's why I think it's a difficult question to answer.

I think you could say that by the early 1950s both the industry and the Forest Service were paying attention. At the same time John Zivnuska was doing that, I was working on a study of the economics of blister rust control, and the Forest Service and the Bureau of Pine Quarantine, which was the one that managed the white pine blister rust program, both accepted my results and took them out and had their guys use them in the field.
Vaux: [But those particular incidents really beg your original question about when forest economists become accepted. I don't know when the U.S. Civil Service Commission first established a register for its Forest Economist series, but I know it was well recognized by 1935. Men in the Forest Service like Julian Rothery, Henry B. Steer, and R.C. Hall, and industry people such as Wilson Compton, David T. Mason, and Harold Shepard were all prominent figures when I first started to study economics in 1934. They were all recognized both in government and industry for their expertise on at least some economic aspects of forestry and were regarded as forest economists. So there was a field of forest economics and there were people identified as forest economists decades before the likes of Duerr, Zivnuska, and Vaux came along.]

What happened about 1950 was not so much any new degree of acceptance of forest economists, but development of a better integrated and better understood concept of what forest economics was. The people I just named as prominent in the 1930s each had a somewhat different specialty; Rothery in timber valuation, Steer in stumpage price data collection, R.C. Hall in forest taxation, Compton in industrial organization and policy, Mason in the economics of forest management, and Shepard in forest insurance. But it was hard to find anyone who integrated all of these different economic specialties. Perhaps that was a principal contribution of Research in the Economics of Forestry, to take a major step toward integration of all those things in terms of the established neo-classical view of economic theory--H.J.V., September 1984]

So, it depends on what you're talking about.

Forest Economists in the Universities and in Administrative Posts

D.I.: How does that correspond to what was happening in the forestry schools in terms of economics in the curriculum?

Vaux: I think they were going along right at about the same rate. I would say it was between 1948 and 1960 that there was the big recruitment of forest economists to university faculty staffs and the big rush to institute forest economics courses.

Lage: What about the Ph.D. program? How widespread was that?

Vaux: It depends on what you call a Ph.D. in forestry. Josephson and I took Ph.D.s in agricultural economics; so did John Zivnuska at Minnesota--with a forestry slant. Here at Berkeley, we retained that pattern for
Vaux: very many years, even after other schools were awarding the Ph.D. in forest economics. It wasn't until after I was dean--I became dean in '55, so it might have been '59 or '60 before we started giving a Ph.D. in forestry here. Forest economics was one of the disciplinary areas in which you could get the Ph.D. in forestry.

Prior to that time we took our degrees in agricultural economics. We wrote our dissertations on a forestry-related topic and said we were forest economists.

Lage: Is there anything else you want to add on the early postwar era?

Vaux: The one thing that I think had something to do with the coming of age of forest economics as a discipline was--this is purely a hypothesis, but if one looked at the numbers, I'm sure something would show up: I think a remarkably high proportion of the people who were trained not necessarily with Ph.D.s, but with advanced training in forest economics of some significant amount--it seems to me a remarkably large proportion of those people ended up in responsible administrative tasks.

You could look at that, it seems to me, in two ways. There might have been something about what decides a person to get interested in economics that relates to administrative skills, I don't know what it is or why that should be, but there might be something there. The other thing is that a lot of forest economists became administrators as heads of forestry schools, as directors of forest experiment stations, this sort of thing. Under those circumstances, it would be pretty hard for the brethren not to accept forest economists if the head guy was one. You'd have to walk around fairly carefully in what you say about forest economists.

And then the other thing, too, is, I think, that there were enough people drained off into administrative work so that it probably reduced the actual output of research and that sort of thing that might otherwise have gone on had those people stayed active in the field. I'm not suggesting it was a bad thing; I think probably for forest economics it was an excellent thing, because I think it's a measure of acceptance if somebody is put into an administrative task.

The Limitations of Economics as a Decision-Making Tool

D.I.: Is there still any significant resistance to the use of economics as a tool in forestry, either maybe because some people use it as the only tool, or as...?
Vaux: I think, yes. And happily so, if it is used as the only tool of decision making. I doubt that economics is the only criterion for decision making in any kind of well-run enterprise. There are things that economics just can't measure. I think there's strong resistance in forestry to making it the only tool. I'm one of the principal resisters now, at this stage of my career. Not because I think there's anything wrong with economics at all, but we've reached a point in the application of economics where it becomes equally important to look at the limitations of economics as well as what it tells you.

Maybe what Duerr meant by his messianic quote is that we were all very enthusiastic undertakers of economic analysis and thought we could do lots with it, just because none had been done.

Lage: That's not the time to think about limitations.

Vaux: That's not the time when you think about limitations. Now, a lot has been done, and it seems to me the limitations need to be taken account of, too.

This reminds me of another afterthought I had after last time. We were talking about Leo Rogin and his view of all the great economists as having been responding to the particular environment in which they found themselves, and their theories being, to a considerable degree, a reflection of how they saw world problems. You were asking me for an illustration, and I don't think I gave you a very good one. But I think I could illustrate the same notion just in my own change of viewpoint from the time I was a practicing economist up to 1955 and my viewpoint after ten years in administration when I came back and became again a teacher and researcher to some degree in forest economics in 1965. When I came back, my viewpoint was quite different.

Up until '55 I think I had been emphasizing the positive things that economics could do. When I came back in '65, I saw the surrounding world as a very different place for an economist than it had been in 1955. So I was much more interested in considering the implications of the limitations on economics and what one might do about that.

Lage: Will this be elaborated on more when we talk about trends and turning points in forest economics?

Vaux: It might be.
Developing Forest Economics Coursework

Lage: We didn't ask about your designing your first course in forest economics.

Vaux: I can comment on that very briefly. I don't think there was anything as conscious as designing the first course in economics. When I went to Oregon State in 1937, I got there a week before the students. There wasn't much time for design. Essentially I inherited courses that were already established, with course outlines and reading lists and this kind of thing. So I started out by teaching what I inherited and rather quickly began to modify that, but not all at once. It probably took me two or three years before I got a course in either forest economics or forest policy that I considered sort of my own rather than an inheritance.

I suppose the closest thing to a design approach was when I came here and joined the faculty in 1948. Zivnuska arrived six months before, and the first year he was here he taught the course in forest economics. He was the junior man to me, and so considered for what reasons I don't know. At any rate, he got, in my opinion, shoved around a little bit. He had to teach what was left after everybody else got their pick of what to teach. So John Zivnuska has taught virtually every course in the forestry curriculum and has done just an incredible job on every one of them. He was unbelievably capable in doing this kind of thing. He's taught fire protection and photogrammetry and mensuration. There isn't a course in the book that John hasn't taught.

It think what happened was that I got assigned the forest economics course, and poor old John got assigned to mensuration or something. I didn't think that was right, and John, I'm sure, didn't think it was right. We wielded enough muscle so that we got two courses in economics. In other words, we were on the semester system then, so there was a whole year of economics. Of course, that was quite an innovation in those days to have a whole year of economics, really emphasizing it.

John and I divided that up between us, simply in accordance with our personal preferences. There are a number of ways you could cut that pie. John took the economics of the forest products industry, which he was very much interested in. And I took the economics of forest land use, which I was very much interested in. So that simply gave the framework within which I could fit the stuff that I had done previously.
Vaux: In the sense of ever having an opportunity to sit down with a clean slate in front of me and say, well, I'm going to teach a course in forest economics, what should I teach and how should I teach it?--I've never done that.

Lage: That's not the way things happened.

Vaux: It's not the way they happened with me.
Focus on Land-Use Problems in the 1930s

Lage: Let's turn to this question of trends and turning points in forest economics.* If you give us a brief overview of what you feel the major turning points were, or the trends, then maybe we can go back to each period and look at some of the things that were going on, particularly your own research or other important research. Does that fit in with your idea of how we should go?

Vaux: Yes. I guess the number one concern was land-use problems and broader social goals. That characterizes the thirties properly. I'm not sure it's as illuminating as to why. It seems to me that was the period of tremendous rural depression, whether it was agriculture or anything else. So there were a lot of policy pressures and so forth to do something about the rural lands. Most of the land utilization studies that were undertaken then, I think, were undertaken with the motive of trying to see what could be done with rural lands that might be more efficient and more effective. I don't think much of that actually dealt so much with new patterns of land utilization per se as it did with how to develop more rational and reasonable structures of local government, things like getting settlement concentrated a little more so the school bus didn't have to run forty miles to pick up one kid, and resettling people so you didn't have three or four back-country families that then had to be serviced by the rest of the community at great expense. This was more a socially-oriented thing than a land-use question in an economic sense, because the basic problem was that there wasn't any economic use for the land in market terms. So you didn't need a land-use study to tell you that.

*See Appendix B for interview outline.
These four categories [on the interview outline], by the way, are the most commonly answered on the project's questionnaire. You may have a different view of the trends.

I understand; I'm not quarreling with them, particularly, I was just trying to relate them to what else was going on that might help understand why that condition existed. Obviously, in the 1930s, the main thing that happened to forestry was the New Deal's emphasis on forestry—whether it was in the CCCs or in the rural adjustment programs, where the Clarke-McNary land purchase program was greatly expanded, or whether it was in the very important thing in the thirties for industrial forestry, which was the National Industrial Recovery Act and the lumber code. That wasn't particularly the province of forest economists, because not too many of them were involved in that. But in terms of what was going on in forestry and what later happened in forest policy, that was a very significant development, that NIRA thing, and we ought to talk about that some more, but maybe when we come to talk about state regulation and that sort of thing.*

I think all of those New Deal activities certainly had a tremendous influence on Forestry, if only for employing a heck of a lot more foresters and forest economists in one line of activity or another.

The government actually stimulated the production of forest economists. Is that fair to say?

I think that's fair to say. The major stimulation came after the war, but certainly the Forest Service did a lot to encourage people to get training in forest economics.

I remember Josephson saying that—wasn't his degree in '38?

Yes.

He said that forest economics was considered the field where there were going to be jobs.

But I'd also consider him the first of the tribe. I am saying that the major stimulation came after the war because not much momentum had been gained by the time World War II came along.

*See p. 112.
1950s: More Expertise, More Concern with Production Economics

Vaux: The second turning point listed on the outline: post-war era, concern with production economics. That, again, was simply a response to what was going on. It was after 1948 that the economy began to boom; the housing rush was on and the market for forest products was better, really, than it had ever been before. That happened to coincide pretty much with the end of the migratory period for the forest products industries. The last migration of the forest products industries really was from the Pacific Northwest into California. In the early 1950s there were dozens and dozens of displaced Pacific Northwest loggers who came down and chopped up the North Coast of California.

[Looking again at the outline], "Concern with production economics and improved techniques"—I suppose that means improved techniques of research. That's certainly true, because by that time you begin to get a number of these people who had taken Ph.D.s. I made a list; between 1950 and 1955, I turned out about five Ph.D. graduates. Three of the five went to other forestry schools to go and do likewise. Zivuska's pattern was pretty much the same, and I'm sure it was similar at the other schools.

So it was by the mid-1950s that you were beginning to get quite a lot of additional expertise which could be expected to improve the techniques of research in forestry, so I think that's an appropriate category.

I don't know that I have anything in particular to add on that, except to point out that that same period was the end of the migration of the industry and was also the time of the beginning of the boom in outdoor recreation.

Lage: Was that noticeable at that time?

Vaux: Here, it was certainly noticeable in the 1950s, yes. It was very noticeable. You can talk a little bit about studies in recreation, and there's even a study statement in that book [Research in the Economics of Forestry], a very brief one--just four or five pages--on how one might approach valuing lands for park and recreation purposes; that was beginning to become an issue because the recreational services were not marketed.

Lage: You wrote an article in '61 on placing value on recreational use of the land.

Vaux: Yes. That was another, later one.
D.I.: Would that have been the beginning of the multiple-use studies in the fifties? Or would those come later?

Vaux: Well, the multiple-use idea--I'm not sure I'm clear on what you mean by multiple use.

D.I.: I mean in terms of recreational uses in addition to economic production.

Vaux: The Multiple Use-Sustained Yield Act came in 1962, but even before that, work was being done on economic theories that might be applicable to the multiple-use problem.

The volume 1, number 1, issue of Forest Science Magazine contains a very elegant economic theory of multiple use, published by Bob Gregory [G. Robinson Gregory]. I always resented it a little bit, though I'm a good friend of Bob's, because half of it he took directly out of the notes from the graduate seminar that I did in economics a couple of years before, and he never gave me credit for it. I thought that was dirty pool because I was still struggling to get promoted too. [laughter]

Funding Sources and the Selection of Research Topics

Lage: Let's try to get into how some of these research projects were chosen. We're dealing with two levels: the large trends, which are rooted sometimes in the social and political conditions, and then the actual research that's being done. Can we tie them concretely together in some way? How would research projects be stimulated? For instance, something on multiple use--what led to yourself or somebody that you know of picking that topic?

Vaux: First of all, as far as I'm concerned, you have to make a distinction between projects and what I'll call studies, which were un-projected. Nobody put up any explicit money for them, but they were just little bright ideas that happened to come along and get refined, in the form of an article or something like that. I think the two sorts of things come from quite different sources.

I would put both the journal article on economic goals for forest policy and this multiple-use analysis sort of thing in the studies category. There were no major projects that lay behind that in a real way. Although the first one was sort of a result of reflections that arose during the course of a project, the project hadn't been designed
Vaux: to produce that. The multiple use one was just more or less a reaction to the things that seemed to be happening and seemed to be interesting and seemed to be worth writing something about.

Now, the projects all had more or less explicit funding, separate from general overhead funding in the university. They were in response to what the funding agencies were interested in. I worked on the blister rust thing because the Bureau of Entomology and Plant Quarantine was upset because they thought they were going to lose their appropriation for blister rust control. Actually, blister rust control, which was tremendously labor intensive, had gotten its big boom in the CCC days when the labor cost was negligible because they had CCC boys do a lot of it. They came back after the war having to pay six or eight dollars a day for common labor; you couldn't afford to do blister rust control any more. So they had to do two things: they had to try to find ways, if possible, to relate their program to their funding limitations, not try to pull up all the gooseberries in the western United States, which is what they had tried to do up to that time. So they needed a method to select the best areas, out of the whole forest, to do disease control, without exceeding the amount of money they were going to get, and at the same time, justify that that amount of money was needed. So they needed an economic study, and I was interested, and that was done.

A lot of Zivnuska's work on lumber supply and demand started because of Weyerhaeuser's project with Stanford Research Institute, which in turn he served as a consultant on. So the projects were pretty much in response to the particular problems that funding agencies saw as important, for whatever reasons.

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Lage: The questionnaire mentioned that economists had been used to justify a preconceived policy. Did you ever have a sense that the Forest Service, or whoever the funder was, was looking for a particular answer? Did you ever have any trouble asserting your independence on some of these funded projects?

Vaux: No. But most of the work that I've done was not Forest Service funded. Most of mine was agricultural experiment station funded. The blister rust control project and the Humboldt County study and the forest taxation study that I did--those had some outside funds in them. The rest of it was all agricultural experiment station money, which essentially meant that I could spend it on what I wanted to spend it on.

Lage: So the experiment station wasn't tied to the Forest Service. I thought it was.
Vaux: No, the agricultural experiment station is totally independent.

Lage: When Zivnuska, for instance, was hired by an industry group to criticize the Timber Resources Review, how did they know they were going to get what they wanted? Had he already published in such a way they knew his views?

Vaux: He had already published, and we all were running around giving talks, and we were all very much interested in what was going on in the industry, so we had quite a lot of association with industry people. I suppose they would probably try somebody out on a small scale first, that wasn't very important, to see what they came up with.

I'm sure this business of the sponsor's interest directing or determining what comes out--it's almost an inevitable phenomenon, whether it's the Forest Service or the industry. But yet that's a very dangerous thing to say, that the industry or the Forest Service put on the heat, because maybe they didn't even need to put on the heat. Maybe that's what the guy believed he was going to come out with anyway.

The only explicit case I know of where there was real pressure put on I think Josephson alluded to in his interview. That was the famous case of chapter 5 of Duerr's bulletin on the timber trends in the Douglas fir region, where the Forest Service wouldn't publish the final chapter. It was finally leaked to a congressman, and it was printed in the Congressional Record. But that's the only situation where I have absolute knowledge of somebody putting the pressure on somebody.

There are plenty of projects that people might have liked to do, that would have yielded results that might not be particularly appealing to somebody, that were never carried out because no funding was available for them. I suspect that's a much more significant way of directing what happens in research than putting the screws on somebody after they've done their study.

Lage: We have an interview with A. Starker Leopold where he responds to a question like that. He did a lot of consulting for private groups. But he always had an arranged agreement with them that he could publish, even if they didn't want to publish his work. Nothing could be suppressed. Whatever he happened to find out would be published.

Vaux: That would be true on most consulting jobs. But in general I don't think most of the forest economists were operating as consultants during the 1950s and 1960s. I don't know what kind of contract John Zivnuska used. Probably one much like Leopold's.
Economic Forecasting in Humboldt County, 1950s

Lage: Let's talk more about specifics on the early period, then go on to the sixties.

You got involved with forest taxation, beginning with the late fifties, I guess.

Vaux: I think probably something ought to be said, first of all, about the study I did in Humboldt County. That was a regional study of rather limited policy significance, simply because it was a regional study, and there was nothing very new about it methodologically—unlike the blister rust study, which had a lot that was new in it, methodologically [see p. 105]. Still, the timber in Humboldt County thing is interesting to me because I did the usual forest economist gimmick of making a projection and sticking my neck out on what was going to happen if certain other things didn't happen and so on.

That was done in 1952. Because I was working with a local forestry committee up there—and they didn't exercise any control, but they were looking at things in a framework, and my purpose was to influence the people in Humboldt County—it was natural to put things in a perspective that they would understand and accept. So I used a twenty-five year projection period, which carried it to 1977. The Humboldt County study is kind of nice for me because it's a thing where I made a projection, just the way we do now, and then had a chance to second guess myself after the fact and see how far wrong I was.

The Humboldt County study, I think, didn't have very much impact on Humboldt County in terms of getting anything started up there that we had suggested would be appropriate. We had urged the development of more remanufacturing of primary wood products, the development of other kinds of resource-based industries, and more intensive forestry to increase timber growth, in recognition of the fact that in twenty-five years there was going to be, as we perceived it, a 30 to 35 percent cut in the level of timber products output because of constraints on wood supply.

I don't think anybody paid very much attention to that. It turned out, however, to be a marvelous source of gratification to me, because in 1977, I was by then serving on the State Board of Forestry. Among the most critical issues that I had to deal with in the first two years I was on the Board of Forestry was the Redwood National Park expansion controversy. The industry complaint was that here they were putting much of the remaining virgin timber in the park and so employment was
Vaux: going to go down. This was a terrible undermining of the economic base of Humboldt County. This was in the political context now, you understand.

I thought the expansion of Redwood National Park was inevitable, and therefore the best political thing to do was to go along with it in some graceful way. So I was pleased to have in my pocket my 1952 Timber in Humboldt County bulletin, which showed that even without the park, output was going to decline 30 to 35 percent anyway. And all this was doing was anticipating it a couple of years.

Lage: Did it follow pretty well the trend that you predicted?

Vaux: In numbers terms, my numbers weren't bad, but for all the wrong reasons.

Lage: A good guess.

Vaux: Well, a lot of compensating errors. But then I always say that economic forecasting is the best of all possible worlds, because if you're right you can say, "I told you so," and if you're wrong you can say, "Well, look, people paid attention to my forecast and took compensatory action."

D.I.: Rational expectations.

Vaux: Let me see if there's anything else about the Humboldt County study. I think it did arouse quite a lot of interest by private landowners up there, more interest than had existed. It didn't serve its purpose, which I think was to try to alert the county: "Look, you'd better do something before these twenty-five years elapse and be prepared with some salvage measures," which I never saw coming about.

Mendocino County Taxation Study: Economics and State Forest Policy

Vaux: The next one I did was the taxation thing in Mendocino County. That was a very narrowly focused study because there was an emerging quarrel between the tax assessors and the forest landowners over the interpretation which should be applied to an amendment to the state constitution that was passed in 1926 and gave forest landowners an exemption from any sort of tax on timber value for forty years after cutting. That amendment was passed in 1926 and then nobody heard anything about it because there was nothing to do. The timber became exempt, and nobody was complaining about that. There was nothing the assessors could do about it, so nobody was complaining. But by about
Vaux: 1960, you were beginning to get the second cycle on this. The constitutional amendment read that immature timber shall be exempt from taxation for forty years and until declared mature by a state maturity board that was constitutionally provided.

There was no definition in the statue on what was mature. Of course, some people insisted that it was an insult to the dignity of the state of California to consider a redwood as mature at anything before a thousand years old. And then there was a different point of view. So there was a political controversy over this maturity thing and some other features of that amendment.

In effect, the Board of Forestry had some responsibility at that time, and the State Board of Equalization had some responsibility, and the tax assessors had some responsibility. Of course, the industry was concerned.

What they did, under the leadership of the Board of Forestry as it was then, was to do what any good politician would do and cook up a study committee. The industry put up about half the money, and the individual taxing counties put up about half the money—and, I guess, the Board of Equalization threw in a little—to do this sample study in Mendocino County. Really, what it was used for was to give people a basis for discussion in a forum that wasn't a strictly political one, and then they were able to reach some meeting of minds.

I had the pleasure of chairing this committee of three industry people, three tax assessors, and a guy from the Board of Equalization and myself. I went to the first meeting and for three hours we wrangled over what the agenda was going to be and whether we were even going to sit down and talk to each other.

Lage: This was from '58 to '62.

Vaux: Yes. Finally, we agreed that this study would be done, and we did the study. It resulted in an accommodation of that particular problem. There was a mutually-agreed-upon interpretation of what maturity was, and so on, that then held water from '62 to '76. So it held water for about sixteen years. That study really did have its own practical political effect, which was to get agreement and resolution of this particular problem and the interpretation of the constitution.

Lage: Was that broadened to include a wider area than Mendocino?

Vaux: Mendocino was just a case study. The committee came up with an agreed proposal that all the parties to it recommended to the Board of Forestry and the assessors and the Board of Equalization, which were the bodies that had to agree on it.
Lage: Now, was forest economics used in this decision?

Vaux: Yes, because half the study was really on the economic role of young timber in Mendocino County, and what the alternative resource base was, and the significance of timber not just in the economy of the county but to employment and to future tax base and all this kind of thing. The second half of the study was sort of the numbers and the ins and outs of the economics of the tax thing itself.

Lage: Did you do the study as well as chair the committee?

Vaux: Yes. I was the principal investigator; I had help from Dennis Teeguarden, who was then a graduate student. He did quite a lot of the numbers crunching and the spade work and that sort of thing.

I was sort of doing that with my left hand, because I was dean [of the UC Forestry School] at the time.

Lage: How was the scientific end, or objective results, of the study applied through the decision making that must have gone on--the balancing act of this committee? Did the study resolve things altogether, or was it then sort of wrangled over?

Vaux: Well, I think the study gave the people an independent, reasonably objective factual base on which to do their arguing. In any political argument, you get absolutely nowhere if you can't agree on the factual base. And the factual base wasn't entirely clear in terms of employment relationships and that sort of thing. But I suspect in all honesty that just as important as any factual base that the study might have provided is the old political approach: if you can get people to sit down and talk with each other about some significant but non-antagonistic kind of problem, you can very often reach agreement. If you take the problem head-on and get people in antagonistic moods for all their discussions, you're never going to get anywhere. So I think that that study was 35 percent facts and 75 percent techniques of trying to arrive at a political compromise.

Lage: That's interesting.

Vaux: I don't think you ever answer any political problem with an economic study, because economics just doesn't provide the answers. It can provide a great deal of information and essential background, but the political decision lies in an area of comparative value judgments of a much broader and more diverse kind than economics knows how to accommodate.

D.I.: That's what I was taught.
Vaux: Were you taught that in economics? Where did you take your economics?

D.I.: MIT.

Vaux: MIT. Well, I think most professors of economics that I know do understand that and try to teach it. But somehow a great many people lose sight of it awfully quickly after they've learned it. That's the real danger, I think.

Impacts of the Computer Revolution and the Environmental Movement

Lage: You mentioned that by the sixties, when you finished your deanship, you had a different view about forest economics. Would the kind of experience you just described have been one of the things that affected you?

Vaux: Well, no. I think it was the environmental thing that really influenced my different approach. My different approach to forest economics after I stopped being a dean not only came from that, but I also had a different problem in the sense that during my deanship, I continued to teach a course in forest policy. But I did not continue with any teaching in forest economics or with any research in forest economics other than this taxation study.

During that ten years, the whole computer revolution, which was just sort of beginning in 1955, so far as forest economics was concerned, that whole thing had blossomed and almost overwhelmed the field. So I had a terrible personal problem: Do I go back and learn to be a computer type, so I can reasonably practice the current brand of forest economics, or do I do something else?

Lage: So, by '65, is that...?

Vaux: Oh, yes. I couldn't have turned a wheel as a major professor for graduate students in forest economics in 1965, simply because of my lack of computer skills. I didn't know enough about a computer to even tell them how to get started, and I wasn't at all enthusiastic about going back and finding out how.

Lage: If you hadn't been the dean, would you have kept up?

Vaux: Well, sure, I would have gotten it step by step. I would have been in a medium where I would have had opportunities to get it. So that would have been a different story. But I hadn't, so I had to decide
Moreover, learning computer skills and concepts didn't seem to me like a particularly attractive task at that point. It seemed foolish for an aged gent like me to go learn that stuff which the younger forest economists could learn twice as fast and be twice as good at it as I would ever be.

I thought I had learned something in other realms in relation to policy and that sort of thing. So I made the deliberate decision that I would focus more on policy type things when I went back to teaching in '65. My graduate students from then on were mainly students with a very strong policy orientation despite the fact that several of them had quite a lot of economics. Others were not economists at all in their approach to policy. One of them was a sociologist, and one of them was a political scientist or public administration person. They were that kind of people rather than economists. By that time [William] McKillop and Teeguarden were the younger generation in the economics faculty, and they were more competent than I was to lead the graduate students in economics. There was this increasing number who had an interest in the policy approach that was not economics, with no place to go. So, as the saying used to be, "Hank Vaux got all the screwballs."

D.I.: Sounds to me as if, in terms of computers, that innovation in economics was adopted very quickly by forest economics.

Vaux: Oh, yes. It came very quickly, because there were many, many problems that you just couldn't handle—many of the most interesting ones—without a computer. And the people recognized and understood that. When they saw the computer arrive, all kinds of eyes started to blaze because they said, "Ah-ha! Now we can work on that one."

D.I.: Has that example also been followed in other sorts of innovations in economics, different sorts of economic tools that were developed? Were they also adopted quickly by forest economists? For example, the introduction of mathematics prior to the use of computers.

Vaux: That was followed pretty quickly, to a certain degree, yes. Bob Gregory, before the time of computers, wrote his dissertation, again, on an aspect of this growth goal theme. It had to do particularly with the transitional path: how do you get to the growth goal from where you are now? He used some quite elaborate mathematics to generate a theoretical solution to that problem. I'm not aware that it ever had any practical application.

But I think all of our people here were subjected to pretty rigorous mathematical preparation, because they took most of their economics and theory in the economics department or in ag econ, both
Vaux: of which were mathematically oriented to a degree. So we had several
students who—I don't know how they would compare with MIT: I suspect
that they might have looked a little simple-minded there. But compared
to my background in mathematics, which didn't go much beyond differential
calculus, they looked like pretty high-powered stuff.

D.I.: We had our variants at MIT, too.

Lage: You mentioned how the environmental movement had an effect, and that's
actually the next trend mentioned on the outline here.

Vaux: I think the environmental movement caused everybody to think about the
question, how do you get at the valuation of these extra-market types
of benefits? Actually, even before 1955, when I was still active in
forest economics research in the more or less conventional mode of
those days, I had written one or two brief things on the methods of
evaluating extra-market benefits and costs. Again, that literature
blossomed during the ten years I was in the dean's office. There
were fantastic amounts of stuff that had come out on that in the
technical economic literature.

Vaux's Focus on New Approaches to Analyzing Policy Problems

Vaux: So I wasn't in any position to get back into that, but the thing that
seemed to me hadn't been done in forestry was that, from the academic
standpoint, nobody was really paying too much attention to either the
policy dimension or the political science kind of approach to analyzing
those sorts of problems.

So I made a deliberate decision to try to get interested and work
on those things and found that very worthwhile and rewarding. There
was a lot of stuff there. I was able to work with a number of these
bright young graduate students who wanted to apply different modes of
approach than the economists were using and I felt were going to make
a very important contribution. I couldn't contribute very much to
them, but I could lend them my prestige so that they could get approval
of their dissertation topics at the graduate office and shelter them
from the otherwise devastating blows of the economists at Berkeley.

Lage: Were these the "screwballs" you mentioned? What kind of work came out
of that period, either your own or these students'?
Vaux: Well, it would be mostly the students' work, because, as you can tell, my approach to forest policy had been very ad hoc and experiential. I'm not sophisticated in political science or public administration or sociology or any of these things. I've learned quite a bit about it, simply from working with these students who were good in these fields.

Let's see, what kind of things came out?

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Vaux: The best way to answer this is in terms of some of the people who I felt were very interesting and made quite a contribution. One was a man named Robert Lee, who took his undergraduate work in forestry here, spent a couple of years in the industry, went back to the Yale forestry school to take a master's degree, and got exposed to Professor William R. Burch, a professor of forest sociology at New Haven. Why Bob Lee never went on and took his degree with Burch, I don't know. It may have been personal reasons. But anyway, he wanted to come back here. He was clear that he wanted to take a sociological/anthropological approach to problems of forestry and society. That was of interest to me although I was neither a sociologist nor an anthropologist.

The key to the great graduate program when I was a student, and I still think it's a key to it today, I hope, was that Berkeley was a strong graduate school in forestry not just because it had pretty good people on its own staff, but because it could get at the resources of all the great departments on the campus, if they were needed. So, in Lee's case, I was able to give him access to anthropology and sociology and some parts of psychology. These were the areas that he specialized in, and he essentially got his Ph.D. in forest sociology, was what it amounted to. His Ph.D. degree is in the forestry department.

He wrote a fascinating dissertation, I thought, on the social meaning of places. He did his field work over in a park in San Francisco and on one of the beaches of the north coast. Then he went up to Yosemite and did a little bit there too, so it was still a forestry theme. Fascinating stuff to me, because he generated data that actually demonstrated pretty clearly that with many of these places, their meaning was in terms of the cultural use of them, not in terms of what was there. That fascinated me because I had always, just on intuitive grounds, said that if you build an air-conditioned bar twenty miles east of Sacramento, you could reduce the traffic in Yosemite Park on Decoration Day by 50 percent. This sort of tied in with that. People perceive not just the physical geography of the place, but they're much more influenced by who they go there with and how each of them sees what's going on there in terms of social interaction, and so on.
Vaux: Bob even produced maps of one of these north coast beaches that showed where, week after week after week—you go out there in the middle of the week and the beaches would be empty, there's just sand. But then there would be very precise locations, on the weekends, when very specific activities would go on, with very specific cultural groups of people. They persisted in spite of the fact that any marks were moved away by the tide.

Bob went on to be a very successful forest sociologist.

Another one's Tom Parry, who took a public administration approach, got a lot of advanced work on organization theory and this kind of thing. He wrote his dissertation on political decision making in the Forest Service as it was illustrated by some of the specific decisions on determining wilderness boundaries and that sort of thing.

Lage: Was this an anthropological study of decision making?

Vaux: No, it was more public administration and organization theory than anthropological.

I should have made a complete list of who some of my graduate students were. I think I neglected to do that.

Lage: Did you instill any economic thinking into these graduate students?

Vaux: Well, both Lee and Parry had already had the undergraduate course here, and they'd taken my undergraduate courses and other people's undergraduate courses in forest economics. Whether they took additional economics as graduate students, I really don't know. They might have been required to for curricular reasons, or they might have wanted to just so they'd have another string to their bow for teaching purposes and job placement purposes. But there was no effort on my part to instill them further in economics; rather, I was learning a lot of anthropology and organizational theory from them.

I had another interesting man who just came through here. Last week I saw him for the first time in ten years. He was a Swede named Anders Lundin. We always had quite a number of foreign students, a good sprinkling of graduate students from other countries. Speaking of mathematics, Lundin was quite a brilliant mathematician. He did a dissertation to develop a model for the demand for recreational campgrounds in an area like the state of California, based on these transportation and gravity models, where you have a center of population over here and various factors. He got involved in some very advanced mathematics in that study that I never understood at all. He carried that through and did some empirical support for it.
Vaux: He had an interesting subsequent career. He went back to Sweden and I hadn't heard from him for eight years, I guess, since he got his degree. The telephone rang the other day, and he was in town. So I had a long visit with him on the telephone and later saw him briefly. He is now counselor to the Swedish embassy in Washington, in charge of agriculture, forestry, and sports.

He's the second Ph.D. candidate I've had who ended up in diplomatic work. The other one was really my first Ph.D. student in 1950. His name was Philip C. Habib.

Lage: He was one of your Ph.D. students?

Vaux: He was my first one.

Lage: I wonder how he took forest economics into his later work.

Vaux: He came very close to going into the Forest Service. Josephson gave him a job. He was planning to do that, but while he was still on the campus, some recruiters came from the State Department and picked him up.

He started out as an agricultural attaché, and of course at that time his degree, on paper, was in agricultural economics, so he had some background in agriculture. He started out in Australia; he was agricultural attaché in Australia for a number of years before he got into the political aspect.

Research in the Economics of Multiple Use

Lage: In the sixties, your research seems to touch more on multiple use of the forest. You have articles on multiple use, on managing wilderness, managing public use, wildlands, wise utilization of wildlands.

Vaux: Those bibliography items are mainly wallpaper in the sense that as a dean, you're always on everybody's hit list to come and make a speech. So I got asked to make a lot of speeches at various places and sort of had to go to show the flag and display the school's interest. Most of those items were offshoots of that kind of thing rather than any serious study. They reflect two things: one, simply that among groups of the kind that those papers were prepared for, there was an increasing interest in the multiple-use problem, plus my own perception that that was an increasingly important problem and one in which I had some general ideas that weren't terribly profound from the economic standpoint; they certainly had some economic flavor to them.
Lage: One thing Josephson mentions in his interview: he found in his position in the Forest Service that he wasn't getting enough people—employees—who had been prepared to consider the economics of multiple use. They were all timber-oriented and had a hard time with more interdisciplinary approach. I interpreted that as his feeling that the forestry schools had sort of fallen down in that respect. What about Berkeley?

Vaux: That's always one thing that's astonished me. Outside of the school, it's perceived as a hotbed of timber fundamentalism by the environmentalists, and a hotbed of environmental overemphasis by the industry. It's too bad it can't be the other way around. So my own feeling is that both points of view have always been represented in the school by different members of the faculty. I have never been able to perceive either that there was a tremendous confrontation over these two ideas within the school, or that one of them predominated over the other in terms of faculty power, particularly.

I think there is one differentiating factor. That is that it's a lot easier to gin up a "rigorous" course in standard forest economics than it is in environmental economics. Even more so when you go into the more abstruse aspects of environmentalism, besides just the economic aspects of it, it's very difficult to teach a course.

Let me give you an example, and this may say something about why this is so. It's neither a justification or an apology, but I think it explains why things are so. It was quite obvious to me, when I came back to teaching in 1965, that there was this imbalance. We didn't have a course in forest recreation. But then you look at the way the forestry school's program was built, it started out back when I was a student, these people were all generalists. They were people trained in forestry, period, without any great specialization. Then, with a number of years of experience in different areas, they came back and taught.

I was the beginning of the generation where the recruitment process was hiring young Ph.D.s who had been trained in a particular discipline, and they developed that field, just as we developed forest economics and Bob Colwell developed forest photogrammetry and [Edward C.] Stone developed tree physiology and so on. That was the standard way to do it.

But recreation was a different kettle of fish. In 1965 it was perfectly obvious to me the school ought to have a course in forest recreation, simply to meet interests and needs and have a focus for study of that kind of thing. But there was no way you could go out and recruit somebody with a Ph.D. in forest recreation and bring him in,
Vaux: so how did you do it? Well, I did it. I started a course in forest recreation even though I knew absolutely nothing about it. There was enough literature and so on--[Marion] Clawson's book had been written and a lot of other stuff--so that one could put together a reasonably substantive course. But no young professor whose promotion was at issue could have afforded to do that in the Berkeley context.

I think that's some of the background of the perception. Why Josephson couldn't find people who could handle the economics of multiple use--I think you can put the question both ways, because the schools weren't turning out multiple-use economists, whatever that might be, but the Forest Service wasn't putting any emphasis into projects or trying to develop people with that expertise. Their emphasis was in training other kinds of people with the more traditional sorts of skills. I'm not sure...

Lage: Chicken or the egg.

Vaux: Yes. Not that the Forest Service ought to start everything, but it's difficult for a traditional school like this one to initiate stuff like that. I think some of the much younger, less traditional, less academically prestigious schools than the University of California have probably done much better, relatively speaking, in some of these new fields, because they didn't have the obstacles to bringing in a young guy who was interested in forest recreation and letting him go his own route and letting him survive.

We've had a bad time in terms of this forest sociology business, you see, where we tried to build that field through Lee, first, and then there was another successor to Lee. In my view, the atmosphere was so rigid that those guys couldn't survive here.

Lage: Was this within the forestry school?

Vaux: I would say the major problem in Lee's case--he could have had more support inside the school--but the major problem was outside forestry. This is difficult to say. Forestry has a terrible time interpreting itself to the rest of the Berkeley campus on appointments and promotions, because Berkeley's viewpoint is sort of academically pure. So forestry, which is an applied field, has great difficulty. The very things that are most important from the forestry standpoint are the ones that are almost impossible to justify in the university context.

The best example of that is silviculture and forest management--the two most difficult positions to recruit and retain faculty for at Berkeley. And silviculture and forest management are the two distinctive
Vaux: elements in forestry. The rest of it is all applied, basic science. But silviculture and forest management are something different. It's almost impossible to find a young man who has a Ph.D. in one of those things, or once you find one to get him promoted on the kind of stuff that he ought to be writing, because they aren't perceived as sufficiently pure academically.

What you end up doing is revamping an economist to do the forest management thing, as the current incumbent in forest management is, or you take a tree physiologist and call him a silviculturalist. Obviously the silviculturalist and the forest management man ought to be in close contact with what's going on in the field. But there are no brownie points in that at all. The brownie points are being down in the laboratory turning out another paper for *Forest Science*.

Lage: That's a standard problem, I guess.

Vaux: Well, I think it's a little more so in the forestry than in a good many fields. Of course the medics and the law school get around this because they don't play by the same rules and use the same control from the budget committee. But forestry doesn't have enough muscle to get away with that.

I've wondered about engineering, but it seems to me they've gone so far in the esoteric science direction that they might just as well be pure scientists. Forestry some day may be ready for that, but it's not that far advanced technologically yet.*

Lage: I'd like to finish up today with topic 4 on our outline: your view of trends and turning points in forest economics. We have talked about your own career—what turns it took—and I can see that it wasn't particularly typical of the field as a whole. By '65 you started taking a different direction.

Vaux: I wouldn't say my career was typical at all. In some sense I was sort of a traditional forest economist for a relatively brief period of time. I became one, certainly, at Oregon State in terms of what I was doing and remained one in Louisiana, then there were the war years. But after 1955, I really did not function as a forest economist in the typical sense.

*For further thoughts on problems of multiple-use research, see p. 70.
Changes in the Field Since 1960

Lage: What were the typical forest economists doing during the environmental decade?

Vaux: They were studying the economics of multiple use; they were studying the economics of the timber market in both short-run and long-run contexts. A number of forest economists had gotten into foreign trade in wood products and sort of conventional business topics that really aren't particularly distinguished from the economics of any other kind of business enterprise when you come right down to it. There has been that element, which was very strong in that period. And the multiple-use angle, modeling of various kinds of problems—mathematical modeling of various kinds of problems.

Lage: Would that have been where the major energy became focused?

Vaux: I don't know enough about it to say what proportion of the energy was in each of those foci, but I'd say there was a wealth of studies which offered interesting problems there—in the foreign trade studies, in the refinement of models for long-run projections of forest situations, in trying to make some sense out of the multiple-use thing, in benefit-cost analysis, which became very important in that period of time. I think that's about all you can say without actually taking a bibliography and pigeon-holing stuff in some way as to where the major effort was. I don't see any particular areas that were predominant or areas that were neglected. There were people working all the way across the board, on everything covered in that book, I think [Research in Economics of Forestry].

Lage: Could that book still be used to define the scope of the field?

Vaux: No. There's even been talk about somebody redoing the book, which I recommended against, because the field is certainly mature now so that a much more cohesive and more explicit and more analytical job could be done. I think the book is obsolete now. Of course, it's totally obsolete in terms of technique because the computer isn't in it. Can't write a book about forest economics now without having the computer in it some place.

I think the building of economic models has served to integrate the field into a little more cohesive field than is evident in that book. In my own opinion that's been at some cost. The cohesiveness has been achieved as a result of a certain degree of unrealistic overlooking of some very important institutional factors that don't happen to fit into the model very neatly, and therefore were neglected.
Vaux: This book might still be useful in that it probably does a better job in calling attention to some of the institutionally important aspects of forest economics than a book written now might do. It'd all depend on who wrote it. If Professor Paul Ellefson at Minnesota wrote it, it would probably have good emphasis on institutional aspects. If some other people closer to here wrote it, it might not.

D.I.: What impact did the book have when it was published?

Vaux: That's very, very hard for me to answer. It's very, very hard for me to determine what impact anything I ever had anything to do with had, because it has not ever been my experience to get very much feedback. I don't know why. Nothing I ever wrote produced much feedback, the book included.

I know that it was useful, particularly to some people who went into teaching forest economics, because you could get at least some sense of a preliminary structure and organization of the field that was useful. You could get basic bibliography and stuff like that. So it certainly must have been helpful to people trying to organize new courses in forest economics, and there were a good many who went out in the few years after the book was written. Whether it was ever useful to anybody who was trying to do research, I don't know. I suppose by building background as to what sorts of research had gone on, how had it been done, and so on, it was kind of a concise introduction that may have saved people quite a lot of time in getting a certain familiarity with the field. These would have been the directions in which it might have been useful.

Demand Management for Forest Products##

D.I.: One of the things that I had noticed in reading some of your work and some of the recent work was that you mentioned that one of the problems that forest economists haven't really tried to work with is the concept of demand management rather than supply management of forest products. This is sort of interesting because during the period of time of the thirties, when economics began moving in the direction of demand management, or stabilization of demand, I guess the Forest Service's interest turned toward supply management, stabilization of supply. Do you think that there will be some reason for the profession to move toward looking at demand in the future?

Vaux: From the management standpoint, rather than as a given?
D.I.: Yes. From a management standpoint, or in terms of government policy.

Vaux: I guess I could see, particularly in terms of government policy, more of an effort for demand management in the context of multiple use than in the context of forest products demand. In a way, all these land-use conflicts that are now so burdensome of the Forest Service and the other public agencies as well, as well as local government—in a way the agencies dug their own pit there, and then fell into it, in the sense that a lot of the development of recreation demand was at least initially, it seems to me, responsive to government propaganda programs—the whole national park promotions, for instance. Now, they had admittedly more than the government behind them; there were certain special interest groups that were there pushing, too.

But in some ways you could argue that, in this context, the government—I'm not picking out the federal government particularly, but also the state governments—have been practicing demand management all along. It just wasn't very well-conceived or well-rationalized demand management. So one might expect them to try in the next decade to get a little better handle on the consequences of what they were doing, and I'm not sure exactly what form that might take.

D.I.: You think perhaps governments have been responsible, at least in part, for creating that sort of demand, or helping to create that sort of demand?

Vaux: Sure, along with special interest groups, certain types, which have demanded it. I was just reading a new article in Forest History magazine about the first superintendent of Sequoia National Park, a man named [John Roberts] White.* They're talking about the early years, in the twenties, when, under [the first National Park Service director, Stephen] Mather's influence, everybody in the Park Service was out ginning up patronage for the national parks. Of course the Union Pacific and the Santa Fe railroads and the Great Northern—they were all in there with the glossy ads in the National Geographic magazine. They were doing much the same thing, it seems to me, that the Sierra Club and the Wilderness Society did at a later date, ginning up for different reasons; ginning up demand for the wilderness areas.

I don't know whether, from the public policy standpoint, government has any option but to get in there and manage demand in some way, if it's going to deal with the problem.

Lage: I got the impression from either an article you wrote, which was on
the RPA, in 1976, or it might have been a response to the questionnaire,
that there was some thought that demand for wood products might also
need to be managed. That it is already "manipulated," was the word
used. The demand was manipulated and perhaps we have to look at
managing some of this demand, because the resource base is limited.
Do you recall that?

Vaux: I don't recall it specifically. It makes sense to me that demand is
manipulated by a wide variety of techniques and for a wide variety of
purposes. I guess the only argument I'd make in this context is that
the demand, whether it be for wood products or whether it be in the
multiple use context, is manipulated for purposes other than solving
what I perceive to be the basic lack of adjustment between aggregate
demand and supply for forests. That adjustment can be thrown out of
balance because these manipulative forces go on that encourage
development but may not be at all reasonable from the standpoint of
trying to achieve some balance between supply and demand for the basic
ongoing resource.

Lage: Is this anything that might be considered a coming trend in forest
economics, or is it just a few people who have expressed concern about
that?

Vaux: I haven't seen anything more than just a few expressions of concern.
It seems to me the expressions of concern are simply reaction to a
problem. How soon you get a more general response to the problem,
I really have no idea. You see, the whole idea of demand manipulation,
particularly by government, it seems to me, is a no-no in American
society. You manipulate demand but you have to call it something
quite different.

So to talk about an emergence of a trend for deliberate demand
manipulation, I'd say the prospect for that would not be good because
that's simply not a palatable kind of thing to talk about. Adjustment
of long-run supply to long-run demand by restraining use might be a
policy. It seems to me you're already seeing that kind of a policy
developing a bit, de facto, and a bit with help from public agencies in
the case of the wilderness thing. In the case of the forest products
thing, I think the pricing system does a pretty good job of that as far
as balancing demand among different products. The main thing in the
forest products field that the pricing system doesn't take care of is
these twenty-year, forty-year trends.

There I'm not at all sure that you can manipulate demand because
I see the demand as basically emerging out of two fundamental factors:
one, population increase, and, two, increase in purchasing power. I'm
Vaux: not ignoring technology, but in the future I suspect that technology may work as much in the direction of favoring wood as not favoring it, because of its renewable character. So I'm not sure that you can manipulate for forestry purposes either one of those basic demand factors. Supply factors you can manipulate by public policy.

Lage: One of the examples given was how many more paper products we use in America as opposed to Europe. I think they might even have used toilet paper as an example. It's just an incredible amount more.

Vaux: Part of that is relative pricing. It would be interesting to look at the comparative paper consumption in Sweden versus the United States. It's one thing to talk about Europe, where a lot of continental Europe has got no indigenous pulp and paper supply. They've got to import it, which is costly not so much in terms of transport, but it's very costly in terms of foreign exchange.

So there are real constraints. But I'd be interested in looking at a country like Sweden, which has ample access to domestic supplies and which has a standard of living and purchasing power comparable to ours. I wonder if the per capita consumption of paper is significantly more in the U.S. than it is in Sweden. I don't know the answer, but I'm just suggesting that.

D.I. It might also be interesting to know what the increased relative price of petroleum--of course plastic's a substitute for paper--might have had on paper consumption.

The other question I was going to ask has basically, I think, been answered, but you might have something else to say on it. That is, some of the more recent sophisticated techniques in economics, for example, optimal control theory and so on, have been applied or are being applied to forest economics. In some cases I think you alluded to that. They give answers or solutions which are different from those that the market gives in the short run. I wonder, is that sort of analysis having any impact on decision making in government policy or industry? Are you aware of any of that?

Vaux: I'm not aware of any of it in government agencies that I'm familiar with. I've seen some literature in the forest economics literature on optimal control theories from time to time. But I'm not really aware of whether it's entered into practical application or not. I would suppose if it has, it's probably in the management operations in some of the larger companies like Weyerhaeuser or International Paper and so on, because they have people, certainly, who know those
Vaux: techniques and would see applications for them if they were there. Whether they're going to adopt it or not, I just don't have enough current acquaintance with industry to know.

Lage: I think we should close for today.

Problems of Multiple-Use Research: Lack of Physical Data; Disciplinary Specialization#

Lage: Today is June 22, 1984, and we're on our third session with Henry Vaux. You said you wanted to do a little postmortem on yesterday.

Vaux: Yes, specifically in response to the comment that you quoted from Josephson's interview, where he said that the forest economists, in effect, were unable to do multiple-use research. My response to that, I felt at the time, was a very weak one. The more I thought about it, the more I thought it was very bad. So I'd like to elaborate in some other lines.

This is all against the caveat that the concept of multiple use is just a desperately fuzzy one. We all have some sense of what it's about, but it's not a clear analytical concept, and many people use it in a wide variety of different ways, so the first problem of the issue is, well, what did Josephson mean when he talked about multiple-use research?

I think probably what he meant was economic research on some kinds of problems of multiple use, which reduces the level of ambiguity one degree, but not completely. What are problems of multiple use? As I see it, they're problems that arise out of the competition for the use of a particular piece of forest land, for a number of quite different and, very likely, competing purposes.

If Josephson's comment means that people were unable to do economic research on those problems, I would agree with that. But I think the question of why they were unable to do so needs some further elaboration. I think it's quite clear why they were unable to do so, because from the standpoint of economic analysis, the two basic analytical elements that you're concerned with are, first of all, on the production economics side: the multiple-use problems are essentially simply one class that economists handle under the study of joint product output or multiple product output problems. The theory of that in orthodox economics is well understood and has been for decades.
Vaux: In the stuff that I was teaching in the early 1950s, and Gregory embodied in part in that article I spoke of, there was nothing new in that; it was simply the fairly obvious insight that nobody previously called attention to that this was a case of classical multiple-product production. The theory was all there in quite elaborate mathematical terms, as a matter of fact, as far as the theory went.

On the demand side, again, there's nothing particularly peculiar conceptually about the theory of demand for recreation and the theory of demand for watershed values and so on. The problem is finding ways to measure the intensity of demand on a basis where you have comparable measures between the different products in the absence of a market. Of course there has been lots of theoretical work done on that in a wide variety of fields.

So I don't think the reason that people were unable to do much research on the economics of multiple-use problems lay in the lack of any theoretical preparation, because I think that people did have the useful theoretical preparation.

The problem was in two other areas. One, on the production economics side, economists start from something called the physical production function. In the multiple-use type of problem, there simply were not and, to a very considerable degree, still are not the requisite physical production functions that are relevant to the multiple-use problem. There, you need to know physically, if you're talking about recreation and timber production, to take two concrete examples, how physical recreation output potentials are reduced if you increase the timber output, and vice versa. And so on for however many products you want to deal with.

The physical data to answer that kind of question just are not available. They were not available at the time we were doing the original theoretical thinking about this, and this is evidenced in Gregory's article, for example; the illustration that he uses is a purely hypothetical one. There were no data available in the early 1950s to quantify a physical production function. I know because I looked, and I couldn't find any.

I looked again when I went back to teaching in the late sixties and early seventies, and there still were no data, except a few very elementary cases. At that time I ran across a very small number of very simple cases that one could use.
Vaux: Now you say, why not? I think that's a very interesting and fundamental question. I view it as a reflection of the disciplinary specialization of research. The people who are doing silvicultural and mensurational research are concerned simply with timber volume production. The wildlife people are the ones you rely on for the wildlife dimension of this sort of thing, and they are totally oriented in most of their schools to sort of a hurrah-for-wildlife thing, and they aren't interested in anything else. Same thing with the range managers.

I think the foresters as a category all have the concept of multiple use in mind, but when it comes to the physical production stuff, they have to rely on the wildlife managers, the range managers, the watershed management people for the data. And all of these people are in their own little specialized boxes. They never get together on the physical research which is needed.

The economists would not regard the physical research as part of their responsibility. The production function is either an engineering or a biologically-derived function, and the forest economists would say, "Thank God I'm not qualified to do this."

Lage: Well, actually, I don't think you're that far in opposition to what Josephson said.

Vaux: I don't think I am, no. That's why I was bothered with my answer yesterday, because I thought it set the thing up in unrevealing terms.

Lage: He was talking about disciplinary specialization as the cause, also. I thought he meant that the forest economists were in little boxes. But perhaps he was referring to the same phenomenon.

Vaux: No, I don't think so. I think the foresters and also the forest economists, many of them, not all of them because they have been almost indoctrinated with a multiple-use philosophy, whatever that means—are probably more alert than anybody to the need for this kind of a multi-output production function. But they aren't in the position to provide it. That has to come from the other kinds of specialists, and they haven't been very interested in it.

I've been quite pleased that recently, in the last ten years in the wildlife area, there has come along some very, very valuable and improved production function kind of data. Some of the leaders in doing that research have been wildlife Ph.D.s from this campus. Naturally, I like to think that they've been alerted to that by the exposure to the multiple-use thing that they've gotten here.
Lage: Isn't wildlife a part of the forestry department?

Vaux: If you're talking about Berkeley, the answer is yes, since 1969 or '70 when Starker Leopold moved over from the Department of Zoology. But his wildlife program up until that time was always in the Department of Zoology and the Museum of Vertebrate Zoology. While we had very good working relationships with Starker right from the beginning, and he was a member of the school faculty, although not a member of the Department of Forestry, there wasn't too much curricular linkage up until about 1970. Then Starker finally got fed up with the zoologists, and John Zivnuska talked him into coming over into forestry. From there on, the undergraduate wildlife curriculum at Berkeley became a subunit of the forestry major rather than a subunit of the zoology major.

So they have been integrated for the last ten or fifteen years. But prior to that, they were not.

Lage: It probably isn't that common on other campuses.

Vaux: You'd have to go campus by campus, but there are strong wildlife programs where there is no forestry whatsoever. Very often, even where there are forestry programs, each of these fields, I think, has been too much concerned, for perfectly natural reasons, with establishing its own identity. Therefore, the concept of wildland resource management as an integrated thing is hard going in academic circles, because if you aren't highly specialized in academic circles, you just don't have much academic respectability. So the broader you get, the less respectable you are.

I think that was one of the major contributions that the emphasis of the environmental movement on the integrative aspects of ecology brought. I think it was very valuable in that context, that it set up a sort of automatic counterthrust to the kind of specialization based on reductionism that the ordinary academic organization fostered.

We can't rely exclusively on that in wildland resource management, we have to go the other way, too. I'm not knocking reductionism for certain kinds of problems, but it is obviously only a part of the resource management picture, where you've got to get the integration at some level.

Lage: If this was the problem, and the forest economists didn't have the data they needed, what means did they have to encourage the development of this data? Is there communication between the various disciplines?
Vaux: Well, you've got that, really, under V-2a [of the interview outline]: Interface with Biological and Managerial Aspects of Forestry. My note there is that the interface with the managerial aspects is close, and the interface with the biological aspects is remote.

Lage: Is there no institutional means of doing it? Just why is it remote?

Vaux: There are institutional means of doing it, to a degree. I'm not trying to make invidious comparisons, now, in any sense, but just to illustrate the kind of institutional problem that's involved. Simply because they represent contrasting modes of academic organization, I'll contrast the forestry organization at Berkeley with the forestry organization at Syracuse.

Syracuse was a very, very much larger institution, the largest forestry school, and Berkeley was one of the smallest, and you can't ignore that. But Duerr had a department of forest economics at Syracuse. So the silviculturalists and the forest managers and the forest products people and the wildlife people, to the extent that they were there, were all in different departments. So, obviously, the communication is not going to be as close as at Berkeley, where, if we've done anything right, I think that the one thing that we did right was to keep this whole menagerie in one department. Fortunately, the size of the institution never got so big that it was impossible to do that.

There were a lot of pressures from the range managers and the wildlifers and the forest products people, and so on, to get out and establish their own identity. Those were always resisted at Berkeley, and they've all been kept together. So from the organizational standpoint, the problems of communication between the biologists and the social science people and the economics management people have not been impeded by structural problems.

I think that's had an effect; I think the degree of mutual understanding between the biological types and the economics types at Berkeley has probably been better than at most institutions, just because they had to sit down and eat lunch together every Monday at the department meeting, and talk about mutual problems, particularly in the instructional field.

But that's only part of it. Again, as a result of specialization, they publish in different journals; they get their research funding, often, from different sources; their peer group across campus is a totally different body of people; and it's a real uphill struggle, given all the encouragement in the world, just in terms of the way
Vaux: things work, to get strong, cooperative relationships between these very, very diverse groups. That's really the basic problem of forestry: it's an integrative field that covers everything from A to Z. You can't identify a unifying subject matter.

The unifying effect is out in terms of practice, where all this stuff has to be pulled together. But the practice part, particularly in the environment of some place like the University of California, didn't carry much academic weight.

Lage: What about within the professional organizations, like the Society of American Foresters. Is there an attempt there?

Vaux: That's a struggle that ebbs and flows, too, but it has the same problems. So you have separate societies of range management and forest products and wildlife management— I guess recreation is a somewhat different problem—you have this splintering in the wildland resource management professions. For a long time the Society of American Foresters had kind of a timber fundamentalist orientation, which really led to the establishment of these other societies, which came along later. Now, the SAF, I think, is much more interested and concerned in bringing them back together. They have this Renewable Natural Resources Center there at the old Grosvenor estate in Washington, where they're trying to encourage other societies to come and live with them, at least; and an effort on the part of the society to modify their membership rules and the accreditation rules so that they're not quite so timber fundamentalist-oriented. But the same problem exists there, I think.

D.I.: You mentioned that there had been some data generated from the wildlife people. Has there been anything in that direction coming from the biology people recently, or does that problem still remain, in terms of production function data?

Vaux: You mean other biological groups besides the wildlife people? I'm not aware of any examples that are as beautiful as this wildlife thing.

Stephen G. Boyce in the experiment station at Asheville, North Carolina, Forest Service has been doing some very interesting and forward looking stuff along this line. He's a forest biologist, but what he does is really in the area of silviculture. He's been able to characterize different ages and densities of forests in terms of the environment they create for spiders and for deer and for birds. This begins to get into the dimensions you can use.

It becomes a very, very complex problem biologically. I think that's another reason the biologists haven't tackled it. It's a very complex one and doesn't lend itself to nice tidy studies that you can run out and publish a paper about.
Lage: Was there any way that a forest economist could say, "Now this is the data that we need to solve such and such a problem"? Or is that too simplistic? Do you just wait until the data appears?

Vaux: The forest economists can say this, and to some degree have said it. But unless they've got the money to go out and buy it, hire the research to do it, it doesn't make much difference. What research goes back to, as I perceive it, is to the reward system. And the reward system is a double-barreled one; it's partly where you get the money to do the research. The forest economists don't have any control over that money. And it's partly in terms of the prestige generators in the particular discipline in which the researcher is working, which is, what do the referees in the scientific journal for that particular field want to see? And the forest economists don't have anything to say about that.

Unless you can penetrate, in some way, the reward system for the individual research workers, whether it's biology or social science, the research isn't going to get done.

D.I.: Has there been any interdisciplinary research to any great extent between forest economists and other disciplines? You mentioned yesterday some of your own students coming from backgrounds in other social sciences. Has there been anything like that with the other sciences?

Vaux: The biological sciences?

D.I.: Biological sciences, yes.

Vaux: I think there has been just as much of it with the biological sciences as there is with the social sciences in the sense that a useful number of people with backgrounds in those more basic disciplines have moved into forestry and forestry research. But I'm not sure that that necessarily deals with this problem, particularly. If you take the other interdisciplinary research concept of a soil scientist and a tree physiologist and an entomologist and an economist all working on the same problem, there's been a good deal of research organized in that format.

I don't want to be unduly critical, but too often that becomes a money-getting device, and then each guy carves up a little aspect of the problem within the big interdisciplinary research area but that's disciplinarily oriented. When they get through they've each completed their own little phase of it, but they haven't had much luck in putting it together in some order.
Vaux: Again, it goes back to the same thing. Where are the rewards for spending time to do that, particularly in view of the fact that that's the most difficult part of it intellectually?

Lage: It's not a very encouraging reply.

Vaux: I think it's an encouraging reply in the sense that until one can get some broader recognition that that's the problem, then we're never going to make any progress. If one could get some broader recognition that that's the problem, and then get some people thinking about that problem, granting the fact that the solution must go deeply into some fairly fundamental organizational and structural characteristics of the research world--still, I think recognition of the problem is the first step to the solution of it. You obviously aren't going to change it in five years.

Lage: And the same problem apparently exists within the Forest Service Research Division as on the campuses.

Vaux: Yes, because the Forest Service, properly enough in their effort to get highly qualified research people and do high-quality research, has in effect incorporated an academic type reward system, where the guys get promoted on the basis of their journal publications and that sort of thing.
IV APPLICATIONS, INFLUENCES, AND LIMITATIONS OF FOREST ECONOMICS

**Impact of Economic Research on Forest Managers**

Lage: Since we're talking about the interface with the forestry profession, we might as well just continue on that topic. Have the forest managers, in the field, used the kind of data and findings that the forest economists have developed?

Vaux: I would say where the research was carried to the point of producing information that the field forester could use, yes. I think it has been, in many cases, incorporated remarkably speedily.

Lage: Is there an example or two?

Vaux: Sure. I think there are many, many examples: Duerr's work on the financial analysis of timber growing and how to optimize returns and so on. It wasn't just Duerr, there were other people involved, but I'm assigning the credit to him because he did much to pull it all together and make it readily available and so on. That simply became standard operating practice.

A more limited example was my sugar pine study. As soon as it was done, it was incorporated into field procedures.

Lage: What kind of changes would result from your sugar pine study?

Vaux: There was another study that went along with it, and that was the one by Hutchison and Matthews on blister rust in the Inland Empire Region, western white pine, which was an economic study but involved a different economic interpretation of the problem and came to different conclusions. But in both cases the general impact of the thing was the same.
Vaux: Prior to those studies, the objective of the blister rust control program was to protect all five-needle pine stands, wherever they were. And those two studies—well, let's just talk about mine because that's what I know best and I better stick to that. It showed that it wasn't economic. Let's put it the other way. My study showed that you could get probably 90 to 95 percent of the benefits that a blister rust control program offered on 35 percent of the total land base that they previously had had in the program.

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Vaux: The study provided criteria that could be used in the field, relying on measurement of site quality, stocking with sugar pine, and a rust hazard evaluation, all of which were things that could be done in the field. So they could take these guidelines out into the field and use what money they had far, far more efficiently.

And there are many other examples of economic data being applied by managers. I don't think there's any particular complaint about that. The thing is that these applications become very, very specific, and unless the manager has specific data that apply to his particular piece of ground, then what is there to apply? A lot of forest economics research has developed the general principles, and maybe examples or two, but hasn't gone far enough to provide on-site applicable criteria. Conceptually, the ideas are there, but the data that you need to apply the concept on acre X are not available.

Providing that kind of data, a great many researchers would say, well, that's just survey stuff; that's not economics research. And that's true. So who does the survey stuff? The land managers say the survey stuff is a research job. The researchers say it's a survey job. So there's a big, huge chasm into which fall large numbers of categories of information that nobody bothers to get.

Lage: I would, as a neophyte, suspect that then you would have your forest industry, your private timber owner, hiring someone to do that survey and put the principles that have been outlined to use on their piece of land. Or the Forest Service would hire them.

Vaux: Would you expect the forest industry to hire somebody to find out how wide a buffer strip you need alongside a stream course to protect water quality and fish?

Frankly, the industry was quite willing to let the blister rust thing go. Why? Because, biologically, what blister rust attacks is the young sugar pine. Trees five to ten feet high are almost sure to be totally killed. You get trees as high as this house, and they have about a 50 percent survival, and bigger trees have an even higher rate
Vaux: of survival. So the industry perceives, well, if they are killed we can get them out and get the value out, and we can replace them with white fir or something else. So the industry's got no interest in spending money for that kind of a problem.

Lage: So then it becomes a public issue.

Vaux: So it becomes a public issue, and the volume of public funds that's available just doesn't go that far.

Lage: Any outstanding incidents where economic research has been ignored, blatantly ignored, because maybe it flew in the face of some deeply held principle? I think Josephson mentioned the Timber Trends study as being an example of that.

Vaux: As being ignored?

Lage: Right, economic research being denied, or the conclusions ignored.

Vaux: That's an awfully difficult question. First of all, it depends on who you talk to. Many people would say--I would not say it, but you could find many people to whom you might ask that question, and they would say--"Well, look what they did with the redwood park. It has ignored all the economic realities to create that park because the values that will be generated by creation of Redwood National Park will never offset the values that were destroyed." So it depends a lot on your political point of view, you see. Ignoring it means that you did something that went contrary to the economic analysis. As we said yesterday, a lot of things enter into policy decisions, sometimes appropriate, sometimes not appropriate, besides the economic analysis. So I don't know how you get at that.

The other thing is, and this has always bothered me terribly when I was on the Board of Forestry, you never really know whether the economic analysis is ignored in a decision or not, because you don't know what the decision maker would have done had the economic information not been available to him.

So I just wouldn't know how to identify an example of that kind of thing. Even though the decision didn't follow the recommendation of the economic analysis 100 percent, the decision maker might have made an even less economic decision, if he hadn't had an economic analysis or had totally ignored it. It seems to me to answer that kind of question you have to have some way of looking inside the black box of the decision maker. And I don't know how to do that.
D.I.: Do a controlled experiment on him.

Vaux: That's a little difficult to do.

Industry Use of Economics Research

D.I.: Along the same lines, are you aware of instances in which maybe some production research has identified more economically efficient ways of managing private timber resources which have been ignored? In other words, how much attention does the industry pay to economic research done in academic settings?

Vaux: I think the industry pays a lot of attention to this because the industry is very, very sensitive to economic considerations. There isn't this gap between working out the economic principles and getting the managers to apply it because the industry people have very, very direct and strong incentives to get the numbers for themselves. This is the place where the industry does do what you suggested they might do on a broader scale. They have every incentive to get the numbers they need to do the in-place application of the economic concept. They do that very well.

A lot of the principles that I spoke of that are associated with Duerr's name fall in that category. At the same time, you have to recognize that the industry is only a small fraction of the private ownership of timber. There are a lot of small, private ownerships where these same principles, in terms of economic theory, ought to be applicable, where they aren't applied by the owners for a different set of reasons. For example, a number of economic analyses suggest that a considerable amount of private forest land in California is growing far fewer trees than it ought to, if it is to achieve maximum economic efficiency. Such analyses also show that a large amount of capital would be required to restock the land to the economically efficient level. This problem arises, I think, not because the owners ignore the economics, but because there are serious institutional and motivational obstacles to securing a greatly increased flow of capital into timber growing.

Lage: What are the principles associated with Duerr's name?

Vaux: Efficiency in timber management, basically. Efficiency in the use of capital in growing trees.

Lage: So forest economists are employed by industry.
Vaux: Oh, yes. Lots of them.

Lage: But, I would say, they're not worried about multiple use.

Vaux: They might be. That would depend on the context of the firm. Again, to go back to the redwood park as an example, Simpson Timber Company and Arcata Redwood and Louisiana Pacific, which were the three firms whose lands were on the block in that controversy, primarily, and Rellim Redwood, they were very much interested in the multiple-use problem, not from the Forest Service's standpoint, but they were interested in showing what a bad idea it was to put that into a park. They didn't always turn it over to in-house economists, but they hired consultants to make the studies for them.

D.I.: That brings up another question. Has there been a trend toward hiring outside consultants by these firms rather than using their own economists, or has it gone the other way?

Vaux: No, I'd say there is a trend toward using outside firms because the nature of what those companies perceive as the workload for an economist, acting as an economist, would be to some degree intermittent. It would only be a very large corporation like Weyerhaeuser, or Crown-Zellerbach, or somebody of this sort who would have a forest economist. They might have general economists to handle marketing problems and this kind of thing, but it would only be the large firms that would have a full-time job for a forest economist.

D.I.: I guess also there's been a trend toward subscribing to some of the big forecasting models, as well.

Vaux: Oh sure, where those forecasting models will answer the kinds of questions there.

 Limitations of the Forest Service's Analyses of Timber Supply

Lage: Shall we talk some, in more detail, about interaction with the Forest Service? Maybe about specifics. In our first interview, we talked about the growth goals, production goals research and how that came about. I was interested in a few more comments about that. Yesterday you mentioned that it was Ed Crafts who suggested that maybe there was a new model, a better model, and then did not like what you came up with.
Vaux: I don't think I meant that Ed Crafts necessarily suggested that there ought to be a new model. I know he had some reservations in his mind, so that when people such as Josephson and myself had discussions with him about some of the defects, he was receptive to the notion of "articulate this and get it down on paper." I don't think that the idea that there ought to be a new model sprang from Ed Crafts so much as the fact that he was receptive to the idea of doing work on this.

As I see it, there was a fairly regular progression. The production goal thing goes back to '52; actually, there were production goals in the Copeland Report in 1933. The concept of requirements was still at the basis of the Forest Service analysis down through 1952, I think. Then it evolved in the subsequent studies. I assume that Josephson must have been very influential in bringing about that evolution. The Timber Trends study was the first one, really, to articulate the demand side of the economic balance approach explicitly. You find fairly elaborate analyses of demand so that you get this dimension [the demand side of the supply-demand curve] of the economic shears showing up in the Timber Trends study in 1962 or whenever that was. But you don't get anything on the supply side of the shears.

It's only in, really, the initial RPA Study that you begin to get some stuff on supply response to price.

Lage: That was in '74?

Vaux: '76, '78. The RPA Act was '74, but the study didn't come out until...

Lage: What was the delay?

Vaux: A combination of two things: lack of information—that was one thing that used to make me terribly uncomfortable at the time all this was going on. Here I saw forest economists spending lots of time on the demand thing, where the problem was no different from demand for anything else, and an ordinary economist could do it. The supply thing is extremely complicated and called for the special expertise of the forest economists, but nothing was coming out. That made me very uncomfortable.

I think the reason for it was, again, that the physical production function data weren't available. So it wasn't a matter of the forest economists looking the wrong way; it was a matter that they didn't have the information that they needed to do their thing.

Lage: So it wasn't necessarily a usable model until later, because you didn't have the data?
Vaux: It was usable, but nobody bothered--well, I shouldn't say nobody bothered. The data necessary to use it was very, very slow in coming.

Well, I don't exactly know how to put this. Let me put it this way. One advantage I had was that as an independent academic researcher, I was a totally irresponsible character. If I published something over my name, and it proved to be grossly wrong, nothing was going to happen to anybody as a result of that. The Forest Service couldn't afford to do that. They couldn't afford to publish stuff that turned out to be wrong.

We had some--well, that's a digression. I won't go into that. This is such an interesting field, I always want to wander off.

Lage: That's okay, really.

Vaux: Well, the digression is this. The costs to the Forest Service of publishing something that turns out to be incorrect or insufficiently qualified are extraordinarily high. There are some interesting examples of that now, arising out of the so-called renegotiation of timber sale contracts. As you probably know, as long as the general level of stumpage prices was going up, until about 1980-81, people got in the habit of forward buying and betting on the increase in timber values, knowing that they had three years to complete their contracts. Vast amounts of national forest timber were bought on that expectation. Then the bottom fell out of the market in '81, and the prices plummeted, and people were stuck with these contracts where they were required by law to cut them within three years and to pay prices that were maybe twice what they could afford at the current market.

That led to tremendous pressure to renegotiate, get congressional relief, that sort of thing, which have not yet come to much, and also have led to a bunch of lawsuits.

One of the most fascinating ones to me--just intellectually a wonderful thing--there's a firm up here in Mendocino County that had a bunch of these contracts--very nice people, I know them quite well. They brought a suit that was really dreamed up by a genius. I think there are seventeen points in the complaint, that this contract is invalid and the court ought to relieve them of their obligations to it.

One specific point that they make is that at the time the contract was entered into, 1981 or '82, I guess, the Forest Service was indicating that stumpage prices were going to continue to rise. Where was this done? This was in the RPA models. Therefore, the Forest Service was issuing misleading information at the time they negotiated the contract,
Vaux: which I think is an example of why the Forest Service has to be very, very careful, whereas I could stick my neck out and do stuff like drawing this supply curve for the first time.

Basically the most sophisticated job was this number 107 [of his bibliography] in 1973, "How Much Land Do We Need for Timber Growing in California?" That actually drew the curve. And to back this up, at exactly the same time I was doing that, Marion Clawson and Bill Hyde, independently, were doing exactly the same thing, except where I did California, they did the Douglas-fir region and the South. We used essentially the same methodology, and the two studies were published essentially the same methodology, and the two studies were published within a couple of months of each other.

Interestingly enough, as nearly as you can make studies in three different regions, the results were comparable. Those were sort of the first supply curves that, I think, were published for this long-term timber thing. Clawson and I could afford to do that, where the Forest Service couldn't.

Lage: So you were using some predictive...

Vaux: Oh, I was reaching out from here to across the street for numbers. A technique I've used quite a little in this kind of situation, particularly latterly, is publish something that's analytically sound, using the best numbers available, even if you have to guess, grant that the estimates are tentative and perhaps invalid because of data shortcomings. But then you have something that people have got to fire at, and this is a technique for generating the proper data.

I used this with the lumber industry in California. I did an even more speculative piece for Resources for the Future: number 121, "State Intervention on Private Forests in California." That was done on commission from RFF, and that was at the time I was on the Board of Forestry and was very much interested in the costs of regulation. So really, without any scientific study at all but simply going around and talking to people and getting an impressionistic view, I incorporated in that some quantitative estimates on what the additional costs of complying with the Forest Practice Act were to the private owners of various classes. I published those.

One of my reasons for doing it was that I had repeatedly challenged the industry to give us cost data. They would come into the board and say, "This is excessively costly, and we can't stand it." But they provided little or no actual cost data. My theory was that, I'll publish this and then to the extent that it is wrong, particularly if it underestimates the costs, then this will create a terrible bleat from the industry, with people coming forward with actual numbers that they wouldn't give us on the board.
Vaux: To my astonishment I got zero response, which makes me conclude that I must have overestimated the costs already.

Using Forest Economics on the State Board of Forestry

Lage: Dwight, you said you were particularly interested in the State Forestry Board and how the work as a forest economist related to that. And there Mr. Vaux gave us a good example. You were serving on the board not just as a forest economist.

Vaux: No, on the board I wasn't serving as a forest economist at all, although that was certainly one of my qualifications. Under our statute, the public members of the board have to have some kind of relevant qualifications and background. These could be very broadly interpreted. You don't have to be a professional in anything to be a public member of the board, but you have to have had some experience in something relevant to the board's work. But my forest economics background was a useful qualification for the board.

Lage: But you did use it, it seems to me.

Vaux: Sure, because all the issues that come before the board have an important economic dimension. So I used it all the time, and one of the most useful aspects of my economic background in dealing with the board was that that gave me an opportunity to convey my conception of the economic realities of many of the problems that the board was facing, such as this one, particularly to the public members of the board, who didn't have the kinds of background where they understood forest economics or knew very much about it. So from my standpoint it was extremely valuable.

Not that many of the board's decisions would be made on an economic basis. If you talk to the industry people, they'd say the board totally ignored economics. I'd contend, on the same basis that I argued a few minutes ago, that that board probably paid more attention to economics and gave more discussion to economic aspects of the problem than any previous board, just because there was a forest economist on it.

Lage: Did your work on the board color at all your own ideas about forest economics and its role and how it fits into decision making?

Vaux: I don't think it changed it particularly, no. I think it confirmed a lot of things in my mind that I had thought ought to be true, but lacking that experience I didn't have the same basis of confidence in its role.
Lage: What kinds of things might have been confirmed?

Vaux: Well, most of the things we've talked about this morning. Almost everything: the lack of information, why the information is lacking, how you go about generating this kind of information—all those things.

D.I.: Do you think that perhaps some of the decisions of the board might have been different had they not had a forest economist as a member?

Vaux: That's very difficult to say, because I think it's fair to say that knowledge about the principles of forest economics is now much more widespread than just the forest economists. There were industry people there on the board who were advocating a much more rigorous application of financial economics than the board was applying.

I think I was able, in some cases, to make that stick a little further because I was not seen as an industry spokesman. But I don't think that was because I was a forest economist, particularly; it was because I was not seen as an industry spokesman; I obviously knew something about what I was talking about. The fact that I was a forest economist was incidental.

The Intricacies of Decision Making: Role of Forest Economics#

Vaux: I find great philosophical difficulty in attributing outcomes in the policy decision-making area to any specific case. I think what goes on is much more complicated than that. So the best you can say is, yes, in my opinion it had some influence, but it's like that other question. Researchers always complain because it's so difficult to justify research expenditures by showing results, because it's the rare case where you can tie a particular economic outcome to previous research. You have some general sense that the research was influential in producing the outcome, but it's impossible to prove. I think it's the same thing with decision making, perhaps even more complex there.

Lage: Dwight, did you have a chance to look over those questionnaires last night?

D.I.: Yes.

Lage: Did you get the sense that some of the economists who responded had more of a feeling that forest economics should play a more major role in decision making than Mr. Vaux does, who seems to see so many other factors and values entering it?
D.I.: I get the impression that some did; some felt strongly about it, but others made the same sorts of arguments, that, in fact, economics is only one of a number of inputs that have to be included in policy making.

Lage: Is that a division in the field?

Vaux: That is. That's a very clear division, and I was just going to say it would be interesting to tabulate the names of who responded which way because there exist today two distinct schools of thought among forest economists. I think it's fair to say, although they are less distinct for a variety of reasons, there are two distinct schools of thought among foresters in general. They're parallel although not identical.

They hang on the issue that Alston talks about in his book. It's that cleavage, and the cleavage isn't between the forest economists and the foresters, which is the way, I think, really, for reasons of simplicity to the general reader, that Alston couched it. You remember this dichotomy?

Lage: Why don't you just briefly summarize it because we had talked about this at our first interview, before Dwight was here.

Vaux: Do you know Alston?


Vaux: You come from Salt Lake, is it?

D.I.: I'm from Logan.

Vaux: From Logan. Well, he's at Weber State.

D.I.: I know him personally.

Vaux: You do know him personally. He's set up the model of the individual interest versus the public interest and traces this both in economic thinking and in forestry thinking over a considerable period of time. He, in his book, argues that the forest economists were engaged in a revolution based on neoclassical economic doctrine. Alston makes the assumption that all forest economists, really, accepted the notion that the public interest was simply the sum of individual interests. There was nothing that transcended that.
Vaux: That's where I would disagree with him because I think there are two schools of forest economists. I think there's one group that shares that individualistic notion, with its primary focus at the University of Washington, but with a number of members elsewhere. And I think there are other forest economists who think there are serious limitations on that and there is an identifiable public interest that transcends the market.

I think there is the same dichotomy among non-economist foresters, which isn't articulated quite so elegantly, but there it tends to focus on the property rights issue and the legal question of what the state's legal basis for intervening and compromising private property rights is. You can see the parallelism between the two.

I think there has been some noticeable growth in the power of the first group—what I'll call the economic fundamentalists—among the forest economists in the last decade or two. Fifteen years ago it would have been difficult to find very many loud spokesmen for the fundamentalist view among forest economists. Now you don't have any trouble finding them; they're popping out all over.

Lage: These same people would feel that the economic judgment should be the major one in making a public policy decision?

Vaux: Yes.

D.I.: To what do you attribute that increase in that school of thought in the last fifteen years?

Vaux: I think there has been an increase in that school of thought in the population at large that's fully visible on the political scene. The forest economists have just been reflecting that same dichotomy.

Shaping Forest Practice and Taxation Laws in California

Lage: We didn't finish talking about work you've done on forest taxation in California. We mentioned the joint committee you were on.

Vaux: The other and, to my mind, much more important thing than the work that the joint committee did came about in 1974 or '75...

Lage: '76, I think.

Vaux: Well, it starts before that, in about 1972, when the first California Forest Practice Act was declared unconstitutional. The leading member on the assembly side of the legislature in forestry matters was
Vaux: an assemblyman from Sacramento named Ed Z'berg. Ed Z'berg had been involved in forestry matters in the legislature for a number of years, particularly as a spearhead of stronger environmental protection in forestry.

He took over the legislative task of writing a new Forest Practice Act. The first thing he did was to provide money for a contract to be let to the Institute of Ecology at the Davis campus of the University of California, in effect to study the problem and draft a new bill.

The Institute of Ecology formed a six-person task force almost entirely of academic people. They included Robert Loomis, an ecologist at Davis; John Ayer from the Davis Law School; Geoffrey Wandesford-Smith, a political scientist; Ed Stone, a forest physiologist from our faculty here; myself as a forest economist; and Robert McCulley, previously director of the Forest Service's Pacific Southwest Forest and Range Experiment Station. McCulley was the full-time coordinator and the person who fitted the ideas of all of the others into a single report.

We drafted a report that dealt with various aspects of the situation and why a new regulatory act was needed. The lawyer of the group actually drafted a Forest Practice Act, a model bill, and interpreted that. In the course of doing that, we had some discussions with Ed Z'berg, and I said to him one night, "As long as this bill is going to require the forest landowners to retain on their lands timber that they otherwise could cut in the absence of this legislation, then you've got a manifest inequity because the present forest tax law is going to make them pay annual taxes on this timber that you've required them to leave." And I said, "That's unfair. I think you ought to do something about the forest taxation thing at the same time that you're doing this."

He said, "Well, put a chapter on it in your report."

So I wrote a chapter on forest taxation in that report [number 105 in the bibliography]. The report was sent in and the debate on the Forest Practice Act went ahead. Nobody ever said a word about forest taxation. So I said, nice try, Vaux.

Eventually the Forest Practice Act passed, in drastically modified form. What our committee wrote could hardly be recognized; well, there are several features of it you can recognize, but it was a very different bill that came out than the one we recommended.

The day after the Forest Practice Act was signed by the governor (who, incidentally was Governor Reagan--I always thought it was nice that Governor Reagan signed our Forest Practice Act, the most rigorous
Vaux: forest practice act in the country), Z'Berg initiated hearings on the forest tax problem and came out in '76 with a yield tax law which was the one we had recommended in the Institute of Ecology report.

Lage: Was that with further prodding?

Vaux: I didn't say a word to him, no. He was just a sufficiently sophisticated politician to understand what I didn't understand--that you don't raise two hot issues at the same time; that just gets everybody confused. You get one solved. As soon as he got Reagan's signature on the Forest Practice Act, then he was ready to go on to forest taxation.

Economists and the Resources Planning Act

Vaux: We were going to say a little more about the RPA [Resources Planning Act], I guess.

Lage: And other things related to Forest Service.

Vaux: I didn't really know much about the RPA until the statute was passed. When I picked it up and read it, it just blew my mind because, in my opinion, it mandates by law the most comprehensive long-range planning process that I've ever seen anywhere. I doubt that the Soviets have anything as well articulated and coherent in the sense of the logic of the thing, despite all the defects of the RPA.

It looked to me as though it would provide a built-in market for twice the number of Ph.D.s in forest economics, and I think it has!

I think the RPA was in some sense maybe a denial of Alston's hypothesis that the forest economists fell short of their revolution. Depending on how you interpret the RPA, you could argue that that was sort of the confirmation of the revolution. I don't think the RPA has to be interpreted that narrowly, thank God. I think that a lot of the problems that the RPA has experienced in practice in the subsequent years have come from too narrow an economic interpretation of the RPA and not enough emphasis on qualitative and non-market factors that should influence decisions. Again, this data problem is part of that, I'm sure; now, just because of the success of forest economics, there's a lot of economic data available of the kind that fits the very narrow optimization model and very little data available on the points that you might want to set up as qualifiers and limitations on that. I think they're sort of trapped in that at the present time. Plus, being trapped by the big computers.
Lage: That's an interesting observation. Do you know of any forest economists who had a role in helping to draft that or influencing the direction it took?

Vaux: I don't know too much about that. Didn't Josephson have anything to say about that?

Lage: I don't believe so.

Vaux: I'm sure the person who would know would be Dennis LeMaster at Washington State University because I think he was on the staff of the Senate or House committee at the time that was drafted.

Up to 1955, I guess I was working to some degree in problems at the federal level. After I went back to research and teaching in 1965, I was more and more focusing on California state problems. If you look at the journals, you'd think that the level at which forest policy was practiced in the United States was the federal level. Yet the federal government influence is really only on a quarter of the land. It's the states that have the policy power for that 75 percent of the land that's in private ownership.

So from that standpoint and from the standpoint of the interest of the problems that were here in California, I found myself drawn mainly, in the latter years, to the state problems, not the federal ones. I'm not particularly well informed on the background of the RPA and even less so on NFMA [National Forest Management Act].

Lage: Any comments on NFMA made from an economist's point of view?

Vaux: I really don't know that much about it.

Analyzing the Economics of Facing Uncertainty

Vaux: There has been a lot of other interaction with the Forest Service besides. This is all sort of the policy planning stuff: you have production goals, timber resources. The Forest Service was involved in a lot of other economic work in other areas: a lot of work in pests besides just the blister rust control thing. In various regions of the country, a good many studies on pests.

A lot of work, which didn't necessarily yield all that much, on fire economics, a tremendous amount there. Why didn't it yield more? I think it's because the fire problem is inherently ill-adapted to
Vaux: using economic guidance in policy formation because the events that you're trying to manage, if you can use that word, are almost unpredictable. One of the basic premises of economics is that there is a degree of predictability about events. If you can't predict what future events are, then an optimization strategy, which is really what orthodox economics is about, is meaningless. So in the face of that degree of uncertainty, the economic response has to be in terms of the most efficient way of facing uncertainty, not the most efficient way of producing X or Y or Z. They're totally different strategies, I think. I think fire can only be handled by the latter kind of strategy.

Lage: That sounds like a difficult one to analyze economically: how to face uncertainty.

Vaux: That's a subject of a good deal of interest to me right now, as a matter of fact. Too little attention has been paid to it. My own line of thought at the moment is that one reason the notion of multiple use is in such a confused state--nobody's really quite sure what it means and so on--is that the interpretations that we've put on it have really been in terms of conventional production theory type of interpretation--you have a mix of products and so on.

As I see it, the real genius of multiple use lies not in that at all, but that one of the important strategies for dealing with uncertainty is to maintain flexibility, the ability to change your mind. So the important thing about multiple use is not to have a mix of products coming out of the forest, but to have a forest that's so constituted that it can alternatively be used for a number of different things, as various uncertainties are clarified.

Well, it has never been interpreted in that way, and I'm convinced that that's the significant meaning of multiple use, not having six different uses on one acre, but having a forest that could be shifted without high cost from a timber-growing use to a wildlife-production use to a watershed-protection use within the rotation period.

Lage: Have you written that up?

Vaux: Some of my current colleagues and I wrote a report for the Forest Service recently. It's this number 131 [in the bibliography]. But it's only in the form of a report to the Forest Service. It has been issued as a little serial by the John Muir Institute, within which we did the work. But it hasn't received any wide publicity, and my colleagues and I hope some day to put something together that would be suitable for the general forestry reader, or something like that.
It deals not just with this interpretation of multiple use, but with the problem of uncertainty in forestry and what some of the devices are for dealing with uncertainty, and we can't possibly be comprehensive about that. But we have some ideas about things like rotation length and stocking level and some standard forestry issues as well as the multiple-use thing.

The interesting thing to me about it is that the answers we come out with on how you face uncertainty look very much like the classical forestry answers to a lot of these questions. That makes all the sense in the world because the classical foresters were faced with great uncertainty. So they chose the criteria that dealt with that.

Lage: Could you be specific about what...

Vaux: Rotation length.

Lage: The questions of sustained yield would come in there?

Vaux: It's a lot easier and a lot cheaper to shorten rotations if your rotation happens to be too long, than it is to lengthen the rotation if your rotation's too short. So if you're completely uncertain about what the rotation ought to be, then you pick the rotation that yields maximum yield per acre indefinitely. That's the classical forester's rotation criterion: get the most wood per acre.

Limited Work with Environmental Groups

Lage: That just brings to my mind--one of the relationships and interactions we didn't list would be with environmental groups. Have you yourself or other forest economists that you know of worked with environmental groups?

Vaux: I think most of the organized environmental groups have been even more suspicious of forest economists than the foresters were. Maybe it isn't totally suspicion so much as it is the fairly obvious preconception that maybe the forest economists don't have much to say that can help an environmentalist politically, just because the values that the environmentalists are most interested in are precisely the values that the forest economist has the most trouble measuring. Anybody who has trouble measuring the value that the environmentalist feels is paramount--that's not a logical linkage to make.
Vaux: There are some exceptions to that, and they're quite noticeable. I'd say they were of fairly recent origin. Joe Fisher, who used to be president of Resources for the Future and then did two terms in Congress, organized an economic unit in the Wilderness Society in Washington which has done some very interesting and apparently useful studies, although I gather they're having trouble surviving now. Joe Fisher has moved on to other things.

Then there's Randal O'Toole up in Oregon who publishes a little bi-monthly periodical called Forest Planning. He often writes of the forest environment from an environmentalist's point of view. He's always challenging the economists on their own ground. He's got a lot of economic sophistication. He's another Alston-type gadfly, but much more oriented toward political action.

Lage: What about on issues like clear cutting? Aren't there ways to muster economic arguments to support an environmentalist point of view?

Vaux: Well, sure. Again, that depends on your philosophy on what the role of economics research is. I think to marshall economic data, or any other kind of data to support a preconceived political point of view is a political action, not research. That's not forest economics.

I spoke of the John Muir Institute. That group was organized by a man who was very close to David Brower. As a matter of fact, David Brower was instrumental in part in the organization of the institute.

Lage: He was president of it for a while.

Vaux: Of the John Muir Institute?

Lage: Wasn't he, when it first started?

Vaux: He may have been, I don't know. But at any rate, that was organized to kind of do research about environmental problems.

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Vaux: Dave Brower thought that the John Muir Institute ought to do exactly what you said, marshall research information in support of the environmentalist point of view. That's exactly what Dave Brower does. Max Lynn, who later became the dominant figure in the John Muir Institute, rejected that on philosophical grounds. He said, no, he'd do the research and find some results that would stand up scientifically, and then use that to guide and inform his policy position; but it's really not research to simply marshall evidence in support of a preconceived political view. The John Muir Institute tried to do the research to guide policy, and I think it was that philosophy that gave it whatever degree of success it had.
Vaux: I would feel the same way about it: that isn't research when you start simply marshalling selected facts to support a preconceived position. That's something else, a perfectly legitimate activity, but it's not the kind of thing research agencies ought to engage in.

Lage: We talked yesterday about working for industry, doing research that industry sponsored, and how that might affect the type of research done. And this is something of a parallel.

Vaux: Sure. But that's why a lot of important problems don't get researched because there isn't a meeting ground of somebody who can and will do the research and the source of funding. The same model would apply both to industry and the environmentalists.

Lage: So some of the really important public policy issues...

Vaux: ...don't get researched.

Lage: Or funded because people are self-interested.

Vaux: That's exactly right.

Relationship to Other Social Sciences, Resource Economics, and Ag Econ

D.I.: We talked a little bit about the existence of what you called a forest economics fundamentalist group in the profession.

Vaux: Can I change the terminology and not say "forest economics fundamentalist" but say "fundamentalist forest economist"?

D.I.: Oh, that's probably better. We talked yesterday a little bit about the failure of some forest economists to differentiate between positive scientific results and normative judgments. Is that still a big problem in the profession, do you think? That is, interpreting or attributing normative characteristics to positive results by the economists?

Vaux: I think that's one way of characterizing the problem—the same problem that I was trying to identify. It's not just a matter of confusion, it's also a matter of perception. I think there are some people who honestly perceive the market model of neoclassical economics as being sufficiently close to reality as to have normative value. I think there are some people who, in my opinion, are so naive that they honestly believe that.
Vaux: I think there are others, perhaps, who are more sophisticated and don't believe that but adopt that stance, again because of the political considerations. They're working in the mode that you were suggesting of finding the data to support them.

Lage: We haven't gone into the relationships of forest economics with other sub-disciplines of economics.

Vaux: Duerr, of course, was sort of the first one to push in this direction because, first of all, he started with his own bare hands the first ongoing forest economics bibliography. Prior to that, the Social Science Research Council had produced a bibliography of forest economics, and there were one or two others. Then Duerr started this ongoing bibliographic project. He got [Charles Lathrop] Pack Foundation money for it originally, and then Forest Service money, I guess, is carrying it on.

Lage: When was that started?

Vaux: It started at the same time as the scope and method project. It was the other arm of the scope and method project besides the book. But then the Forest Service institutionalized it, I think. Duerr dragooned this wonderful lady at the Syracuse Library to do all that gosh-awful work on a continuing basis.

Early in the game--it was after the scope and method project was over--he broadened the scope of that bibliography to a bibliography of the social science research in forestry, not just forest economics. Why he did that, I don't know. I assume it was because we had more or less parallel conceptions that this was all part of the same bag, and it ought to go together. I think Duerr did that, essentially, out of his insight and foresight and initiative. He and his wife became increasingly interested, as time went on, in other social science aspects, although I don't think this ever got into his teaching program in any explicit way that I know of.

Then some of the other schools hired political scientists to teach forest policy. Yale hired Burch to develop forest sociology. We've turned out some people here, as I mentioned yesterday, with other kinds of social science interests. So I think those other relationships have steadily emerged and will probably go a lot further now. They'll reproduce in the next ten or fifteen years the kind of impact forest economics was having in the late fifties and sixties.
Vaux: I think that's underway, and there are enough people and the kind of people involved in that now so that that's on its way. It's just not terribly visible yet, unless you look in some detail at the current research literature. [break in tape]*

D.I.: One question I wanted to ask was the question about the relationship between forest economics and other subdisciplines of economics, for example, resource economics. Is the relationship between forest economics and what we call resource economics becoming closer, more distinct?

Vaux: I can only look at that from the standpoint of forest economics. I don't know what the resource economists would say about that. It seems to me the relationship has become increasingly close in the sense that resource economics produces analyses and information and so on that's useful to foresters. Probably it also goes the other way.

There are probably more resource economists doing some work in what I would think of as forest economics than there are forest economists leaping over and doing work in broader areas of resource economics. But I think that's natural, given the frames of reference of the two fields, where most forest economists feel a constraint—not a constraint, necessarily, but their opportunities are maximized if they're dealing with forestry where they've got specialized background because of their education. And resource economists, on the other hand, don't usually have that sort of specialized background to exploit and don't feel constrained from entering forest economics because they don't have any equivalent specialized background in it.

I'm reacting here, I guess, not just as a forest economist because I happen to have inside information here. My son is a resource economist, and his bag is water. He's done contracts for the Forest Service on the economics of recreation in wilderness areas, and he has some interest for and feel for at least that aspect of forest economics. I see him not feeling any particular hesitation to take on a forestry resource subject, if the opportunity arises.

D.I.: There are other fairly prominent examples of economists with no formal educational training in forestry who have also done research in what we would call forest economics.

Vaux: Who are you thinking of, particularly?

*Harold K. [Pete] Steen of the Forest History Society joins the interview at this point.
D.I.: Clawson is an example.

Vaux: Well, sure, they go right back to Ralph Marquis. There are a lot of these. On the other hand, Clawson is a fairly unique gent, and he was a range economist for a long time, and the relationship between forestry and range has always been fairly close. And then he was the Director of the Bureau of Land Management, where he got a lot of exposure to strictly forestry problems.

I thought maybe you were talking about someone like the Nobel Prize winner...

D.I.: Samuelson?

Vaux: Samuelson.

D.I.: Yes. [Paul] Samuelson has not very much research in that area, but some.

Vaux: Are you thinking particularly of that paper he delivered at the University of Washington? That was an absolute economic masterpiece because he followed the economic analysis, came out with orthodox economic conclusions, which are essentially contrary to what most foresters think is the right thing to do. And he put in every one of the qualifying assumptions explicitly, so he was perfectly protected. So his results were totally irrelevant to the questions that were asked, but it was a beautiful piece of economic logic.

D.I.: Yes, he does discard most of the elements that would maybe have some relationship to reality.

Vaux: Well, he doesn't discard them, he just assumes them away. He does that so nicely, and then arrives at logical conclusions.

Lage: You mentioned, when we first met, an early influence that forest economics has had on economics as a whole.

Vaux: You may want to challenge this, but my understanding of the situation is that the Faustman formulation of the valuation problem was a classic anticipation, really, of what's now the accepted approach to valuing assets with a long life period, where you discount future streams of income and expenses. He developed a classical formulation of that. That's one of the things Samuelson brought out well in his paper.
Vaux: I don't know whether historically any economist who was active in the role of theorist relied on Faustman.

There was a paper written twenty years ago by a guy--where is he now, he's jumped around all over the country? I think he is now at the University of British Columbia. Mason Gaffney--do you know that name?

D.I.: I know the name.

Vaux: Mason Gaffney was a straight economist, and he did some work tracing the historical development of valuation theory, where he gave some credit to Faustman. I'm not sure just what the actual historical flow of ideas was there. That, I think, would be perhaps the only startling example I can think of.

.Lage: Any other questions on that? Any methodological relationships with other disciplines of economics? Is it becoming more distinct or less distinct as a field?

Vaux: Forest economics? I think it's probably becoming at least more visible, simply because of the greater number of people that are involved and so on. The relationship that isn't explicit here [on the outline] is the very strong relationship and origins in agricultural economics. This was to some degree an institutional factor, but the group here was strongly out of agricultural economics, the group at Minnesota was strongly out of agricultural economics--I'm talking about the graduates, now, the people who took degrees in these institutions.

At Harvard, the people were mainly under John D. Black's wing, and he was an agricultural economist. Primarily because many of the forestry schools are at land grant universities, where agricultural economics departments were already established, it's almost inevitable that that tie should have been close in the initial two generations. I think that tie is much weaker now. The forest economists are pretty much rowing their own canoe to a degree that they weren't doing thirty years ago.

Major Figures and Institutions in the Discipline

.Lage: Could we move on to our final topic on major figures and institutions? Not just names, but if we can get into analyzing the role or the styles or approaches of particular people or schools of thought, and whether certain institutions are identified with schools of thought within the field.
Vaux: Except for the dichotomy that we've already recognized between what I call the fundamentalists, the highly individualistic premise, versus the public interest premise, except for that it seems to me maybe the field suffers from there not being enough diversity of approach.

For example, if I think of agricultural economics, the University of Wisconsin has always been sort of distinctive because of its emphasis on institutional economics and that sort of thing. One of the criticisms I'd make of forest economics is that we all got swept up in the beauties of the neoclassical theory and so fascinated with churning the numbers on that sort of approach that, for a long time, we sort of forgot about the institutional stuff.

I made a visit back to the University of Minnesota a month or so ago and was delighted to find out that Paul Ellefson there is doing quite a lot to revive an institutional type of approach.

Other people, like Pete Steen, have picked it up as historians. Some of the young forest sociologists are picking up much that's illuminating the institutional side, but that's not quite the same thing as an economic approach based on an institutional view.

Lage: What kind of study would that be, an institutional study in economics?

Vaux: It would be very descriptive. I gave away the published example I had here. Paul Ellefson has done a very interesting study of the financial structure of the ninety largest forest products corporations. He didn't try to apply any fancy model; he was trying to describe what's out there in economic terms. He uses a vast amount of data on these corporations, from publicly available sources and puts it out there.

One of the troubles with the institutional approach is that you can't sit down and look at your navel and write a publishable article in a week, which you could do with a neoclassical approach in economics for a long time. In the institutional approach, you have to do a lot of hard sweating, hard work.

Pete knows all about this. Historians are, really, institutionalists on a broader basis. But just look at the disdain with which economic history is treated in most of the economic departments that are regarded as top graduate departments. You'd have a hard time finding a course in economic history on this campus, much less an economic historian. And it seems to me economic history is the groundwork for an institutional study of the economy. The academic world, you see, is responsible for all these problems.
Lage: That's what we're finding. [laughter] On the questionnaire we asked various people, "Who are the top forest economists who have had the most influence on the field?" What would you answer to that?

Vaux: That's not so hard to answer, I don't think. Obviously Duerr, Gregory, and Al [Alvert] Worrell, because of their textbooks. Those textbooks have to be influential because most of the students learned their forest economics essentially from those guys. So they're, by definition, the most influential in a direct sense.

I'd say [H.R.] Josephson was influential in a different way in that, first of all, he was vigorous and active in getting the Forest Service to recruit a lot of other good economists. He managed to convert the Division of Forest Economics Research--and I can say this from personal experience because I worked in that division for six months in Washington right after the war, and there were mighty few economists there except Josephson. There were a lot of inventory types, because the major funded project was the Forest Survey, which was basically mensuration, not economics. There were a lot of those types. I think Josephson was responsible for getting a gradual increase--and Crafts, as long as he was there, before he soon moved on to higher levels of responsibility--but Josephson continued to carry on that job and eventually accumulated quite a stable of economists there. A lot of them moved on over into the RPA organization when that came along. By that device, rather than through the teaching mode, it seems to me, he was a highly influential person in the development of the field.

Who else? It seems to me once you go from that level, unless somebody tickles me by suggesting some name, a much larger number of people come to mind among whom I can't distinguish. They were influential, but...

Lage: You and Zivnuska are always mentioned.

Vaux: Certainly John Zivnuska belongs there, and I guess the fact you're here means I belong in there somewhere.

D.I.: These other people would be more influential, then, in perhaps supervising graduate students and publishing articles.
Landmark Studies

D.I.: Are there any landmark studies that you can easily identify in the history of forest economics? Your blister rust study is an example, maybe, of a change in the way that...

Vaux: Well, I would consider that personally a candidate as a landmark study. I was going to go back further than that, but maybe you don't want to go back of that.

D.I.: No, go back.

Vaux: I'd say W.W. Ashe's stuff on the economics of log and tree size. That was way back World War I vintage. You certainly would have to rank the Forest Taxation Inquiry as a landmark study. I don't think it's possible to pick out one study, but certainly the land-use studies that we made some mention of, which were done on a very wide scale, had two kinds of effects. One, they directed a lot of foresters' attention to the institutional aspects of forestry, and they had some impact in terms of land classification—perceptions of how land ought to be used and so on.

I think the reason you can't point to one study there is that a land-use study is very, very local in its application, so you got one that applies to one county, and so what? But there were enough of them done so that I'd say that the land-use studies collectively in the thirties and forties had an impact on the forest ownership studies, which were kind of an outgrowth of the land ownership kind of thing, which were done in the 1940s and early 1950s and were influential in the same way.

Again, you can't pick out one as being a key study because a lot of that was the filling in of this data linkage between the principles and the on-the-ground conditions. Those were sort of a first step in the filling of that gap. The first few got attention as economic studies, but after the first few it was turning the crank, so you can't identify any.

Lage: The first few set up principles that then were applied?

Vaux: They set up methodological approaches.

Lage: Was there a particular person identified with those, the early ones?

Vaux: Lee James did some. Al Folweiler and I did one. Some of them were done sort of organizationally, and it was hard to tell who did do them. There was a big one here in California on El Dorado County and the
Vaux: Sierra foothills in general. That was done by a whole stable of people: A.E. Wieslander, Josephson, Cary Hill, Professor [David] Weeks—talk about interdisciplinary research, there was a good example in 1937.

We were even doing land ownership studies. Dennis Teeguarden did a couple, and Paul Casamajor did land ownership studies in Mendocino County and up in the Sierra foothills in the 1960s. So they sort of go on all the time.

As I look at my own work, I think of what I would consider two or three personal landmarks; the first one would be the one we talked about yesterday: "Some Economic Goals in Forest Policy" in 1949. That was a landmark to me because it sort of set this framework of long term supply/demand analysis as having something to do with how you ought to set goals for forest policy.

Then there was the subsequent study, "Forest Production Goals: a Critical Analysis," which Zivnuska and I did together for Land Economics in 1952. That was really a restatement of the same thing in rigorous economic terms, and that's probably better known than the first one, because it was in rigorous economic terms, and there weren't as many loose ends as there were in the first study.

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Vaux: Then the sugar pine study,* to my mind, was a methodological landmark, because I think that was the first time anybody had the guts to try to draw one of these supply curves. That was a very limited supply curve, because it was just for a very limited resource. But the methodology there was really the same one that I used later on in developing the supply thing for California forest lands. In addition, I applied a concept of treating differently timed outputs (i.e., the yield from two or more different age classes of trees) as joint products for purposes of determining costs. Gregory outlined the theory of time-jointness in timber production in his dissertation, which came shortly after the blister rust study, but I think my study may have been the first one in which the concept of time-jointness was applied in an empirical analysis. So I would think of that study as, as far as I was concerned, representing an intellectual contribution.

I've already referred to Duerr's stuff on financial analysis of forest management opportunities. I think that was all landmark work. Certainly Clawson's study on the economics of outdoor recreation—if you permit that to be regarded as, in part, a forest economic study, as I

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Vaux: think it was--is clearly a major landmark, with a lot of breakthroughs in terms of the courage it displayed to deal with some of those problems and the innovation that was involved in the methodology, and that sort of thing.

I think Duerr's study of the potentialities of the Douglas fir region for sustained yield was certainly a landmark, not only in the intellectual sense but also in the sense of leading to some very significant policy results, even though they were, in many ways, negative results in terms of what Duerr's conclusions would suggest.

That's why it's always difficult to judge what the effects are of forest economics, because they may be just the opposite of what the forest economist concludes, but they may nevertheless have been triggered by that particular work.

Lage: This is a good example.

Vaux: Yes. Well, I'm sure there are others.

Forest Inventories: the Economic Models and the Adequacy of the Data

Steen: If I might ask, Henry, how important are the forest inventories, like TRR that was headed up by Ed Crafts of the Forest Service, and John Zivnuska took issue with these certain assumptions. Are those economic, in your terms?

Vaux: There's this whole series of Forest Service studies. You've got an interesting article in the current issue of Forest History* reviewing all those things, that I was reading last night. It goes back at least to a 1906 study by E.A. Ziegler which published an estimate of growth vs. drain. And every seven to ten years later the Forest Service made another one.

I think it can be documented that, certainly from 1933 on, the formal economic model around which those studies were built began to become, first of all, more explicit, and then more sophisticated in economic terms as time went on. I think that could be traced

progressively through all those studies beginning with the Copeland Report, coming down to the most recent revision of RPA. They embody, each time, a somewhat more sophisticated economic model and, each time, more extensive supportive empirical work of one kind and another. So I don't think it's fair to talk about the RPA versus the TRR versus the Copeland Report. I look at these things as an evolution on which forest economics had some impact.

I think they're valuable, extremely valuable, and I think they've had a substantial amount of influence. Each time the criticism, such as Zivnuska's criticism of the 1952 study, has been of great value in improving the model for the next time around. I tend to look at this stuff in a very evolutionary sort of way. After all, you're talking about a resource with a 100-year time horizon, at least, so if it takes you thirty years to build up a good model, that's not bad.

A follow-up to that same thing. You and I were at an RFF [Resources for the Future] conference in Washington a couple of years ago. Marion Clawson read a paper that was generally critical of RPA but used all of the Forest Service's figures. The Forest Service is the primary generator of data that all economists use. Is that a fundamental problem in making an analysis of what's going on?

You mean in the sense that the Forest Service gets the data, therefore they, in some sense—and not in an invidious sense at all, but by the very intellectual fact that they get the data—then that preconditions any conclusions that can be drawn from that?

That's conceivable. What do economists do?

I think that's a problem, and how important it is, I'm not sure. I'm not sure that it's very important in our present state of knowledge because there are so many things about which we need data that I'd be hard-pressed to argue that somebody ought to be checking the Forest Service's data. I'd be much more prone to argue, if there's more data gathering capacity available, let's go out and get data on different things.

This brings me to another thing we haven't talked about yet. Whatever input I had on the state resource assessment—the so-called FRAP, Forest Resource and Policy program, in California—which is a state program that closely parallels the RPA, I used my influence there to have them spending money not on second guessing the Forest Service. Take all the Forest Service data, but use what little money you have to get stuff that the Forest Service doesn't have anything on.
Vaux: I think forest economists are just stuck with that problem, Pete, but knowing the way the Forest Service gets data and how they go about it, I don't think there's any deliberate constraint involved there. There may be a lot of implied constraints just because the Forest Service is interested in certain things, and there may be other things that are equally important that the Forest Service isn't interested in, so you don't have any data on them.

D.I.: So the ability to use data has jumped ahead with the computer, whereas the availability of the data has not made a comparable leap. Is that a fair assessment of the way things are now?

Vaux: I'd be reluctant to generalize to that degree. It's too easy to make a blanket assertion that just doesn't stand up. I think in this whole area of some aspects of multiple use—the recreation thing, to some degree the demand for multiple resources generally—there have been substantial advances made in the availability of data.

In contrast, in some other situations there has been a decline. The census collects much less comprehensive data on certain aspects of the forest products industry than used to be the case. Even when I was a student, you could find out things from the census about the lumber industry that you can't find out from the census today, because their sights have changed, and the lumber industry is to some degree less important, so there has been less focus on it, that sort of thing.

At the same time, the conjuncture of the development of policy problems with the availability of the computer to enable you to handle huge data problems highlights some of this production function type of stuff that is missing. So that gap was always there, it just appears a lot more important now because the problems have moved to embrace that sort of thing, and the computer gives you the capability that you didn't have before to deal with it. So the data gap looks a lot worse than it used to be.

But it's a dynamic kind of a problem. You can't say the data is worse today than it was. It isn't. But compared to the size of the problems it is.

Lage: We didn't talk about who might have been leading figures in bringing the use of the computer into forest economics—operation research.

Vaux: It came in through mensuration, originally. Mensurationists were the first ones, I think, perhaps, to make a great deal of use of the computer, because the stuff they were dealing in was highly statistical and perfectly obvious application.
Vaux: Not being a computer jock, I just don't have a feel for who the key people were. I suspect it was a matter that the computer just gradually enveloped everybody. Work was going on on just a whole lot of fronts simultaneously by a whole lot of people simultaneously. The opportunities were so vast that it was popping in everywhere, rather than being some one person who took leadership in that. I suspect that's what it is, but you ought to talk to somebody who knows more about computers than I do.

Forest Economists in the Private Sector

Steen: This is a general question. Part of the consideration in designing this project, of which this interview is a part, was that we wanted to have a balanced outline. If one assumes that the United States is basically a capitalistic society that's interested in the bottom line, why is it that Weyerhaeuser, for example, if I'm correct, would hire someone as prominent as George Staebler for silviculture but not the equivalent in economics? Why doesn't industry have prominent economists on their staff?

They may have economists, but they're not writing the papers; it's the Forest Service and the universities that have dominated the field. One would assume that all the economists would be in the private sector, but we haven't found a good spokesman for the private sector in this study.

Vaux: What about Jim Yoho? Have you talked with him?

Steen: Yoho? He's on the advisory committee, but he has not been particularly responsive to the various questionnaires. He's a name on my list.

Vaux: He's a forest economist. He was an academic forest economist at one time, briefly, at Duke, I think.

Steen: Is he now working as an economist, or is he the vice-president of something?

Vaux: I think you have a much more difficult time, Pete, in identifying who's an economist and who's not an economist when you go into industry than you do in either the Forest Service or academia, because, in a way, everybody in industry who's employed by industry, with the possible exception of the lawyers, and even them to some degree, is concerned with the bottom line. So in a way, everybody in industry,
Vaux: Regardless of what they're doing, is to some degree an economist, and the only question is how good an economist they are, regardless of what their title is.

And a second point is, particularly as far as publications go and that sort of thing, the industrial reward system doesn't pay anything for publication, whereas the academic and governmental reward systems, in some senses, do. The academic system pays a great deal in its reward system for publication.

Indeed, publication of the most sensitive and most interesting economic information, the costs and the production functions, the stuff that all of us in academia would love to get our sweaty little fists on, is privileged information. Maybe one reason industry doesn't hire people they call economists is because they don't want anybody to see that they've got an economist there because then that might be an unfortunate source of leakage of information that they don't want to get out.

Steen: Is it fair to assume, then, that the private sector has not contributed measurably to the evolution of forest economics as a discipline? It really is an academic or an institutional, Forest Service-dominated field?

Vaux: I don't think it would be fair to say that industry has not contributed because industry has contributed funds to a good many economic studies by academicians. If you took as your criterion of who has made a contribution how many articles are published in the literature, from government sources, from academic sources, and from industry sources, you'd come out with virtually nothing for the industry. You'd reach the conclusion you've just drawn. But I don't think that's a fair criterion, because there are a lot of other ways in which the industry does contribute. Earlier I mentioned a number of people like D. T. Mason, Wilson Compton and others in or close to industry who are generally recognized for contributions to forest economics.

After all, if the industry wasn't functioning on a day-to-day basis, the academics wouldn't have any data they could even look for, much less find. So I don't think it's fair to say the industry has not made a contribution. How can it not have made a contribution if it is what 50 percent of the study is all about?

I don't agree with your initial premise that the United States is a capitalistic society organized around the bottom line. [laughter] And that's the subject of forest economics.

Steen: Well, it's the assumption.
Vaux: I don't agree with either leg of that assumption. [laughter]

Steen: All right.

Lage: Any further comments?

Vaux: You mean in total?

Lage: Or, about that question.

Vaux: I don't think I have any further comments on the role of industry question. Well, indeed, I have to say that there's a tremendous difference between the approachability of industrial organizations—by this I mean the industry associations—and the individual firms, and the individuals within individual firms. Except for published information, you can get very, very little insight out of the trade associations. They're very, very protective of any data.

You can go to individual firms who constitute the membership of that association. Perhaps half of them will be very interested and helpful and forthcoming and do what they can for you. Then beyond that you go to the individual level of people who work for those same individual firms, and you can't get hard data, but you can get a lot of useful information there. That thing I did for RFF on the costs of the Forest Practice Act; that really was my principal source of data. I couldn't have gotten any numbers that I could have written down on a schedule and put through a computer. But I could go and talk to the people on the ground who were doing the work that lead to those costs and who knew what the costs were, and say, "Well, what do you think about this?"

Very often I could get informed judgments that, to my mind, were reflective of some degree of reality, although not as precise in quantitative terms.

Steen: As long as you're rejecting my assumptions, do you suspect that a lot of corporate leaders would feel that academic economists and Forest Service economists are rather naive about how the marketplace functions and so it's not really a serious activity over there?

Vaux: No, I don't think so. I think they would take a rather different view. I think they wouldn't think the academic and Forest Service economists were naive, in most respects. It's going to depend a lot on who you talk to in industry, too, Pete. You talk to Bill Holmes, the president of the Soper-Wheeler Company, you'd get a very different view of academic forest economists, I think, than if you talk to
Vaux: Charlie Bingham, the operating vice-president of Weyerhaeuser. Not because one works for a huge corporation and the other works for a small company, not because of that directly, but simply because of their own view of the world.

I think many people in industry would see the academic work in forest economics as useful and productive and important to them, but something that they can't control the outcome of and therefore they shouldn't, as companies, use their stockholders' money to support.

Steen: You do feel that the course of forestry evolution in the private sector has been influenced by the field of forest economics. They do pay attention, and they read and think.

Vaux: Well, they probably need it less than anybody else because, as I've said, everybody in industry is to some degree an economist. After all, that's what the neoclassic economist is studying: how the private decision maker in a market economy functions. So those guys are the object of study. It would be very strange if they didn't—something would be dreadfully wrong with forest economics if the people in industry didn't behave pretty much the way the forest economists say they ought to behave. That would be even worse chaos than we've got.

Steen: One of the respondents to the questionnaire characterized forest economics as "management software." Must be a computer guy. It is one of the things a decision maker uses.

Vaux: That doesn't sound too bad to me. I'd have to think about it. I may have a different answer tomorrow, as these two people know, but that doesn't sound too bad to me.

NIRA Lumber Codes: Influence on Subsequent State Regulations

D.I.: You were going to comment further on NIRA.

Vaux: Yes. I don't know whether this is forest economics or not. I'll try to make it forest economics. It certainly belongs in the institutional side of forest economics, because there are many economic dimensions to it. It seems to me not sufficient attention has really been paid to, first of all, how and why did the federal government get into the experiment in forest practice regulation that was embodied in the lumber code of the National Industrial Recovery Act?
Unlike the other codes that were the centerpiece of the National Industrial Recovery Act as an industrial management scheme, there was in the lumber code something called article 10, which dealt with forest practices. A very elaborate set of forest practice rules was generated. It was different in every region, depending upon regional silvicultural and other conditions.

A very elaborate set of forest practice rules was put into the lumber code, and then as long as NRA remained in effect, which wasn't very long—it was shortly after the rules were developed that the whole act was declared unconstitutional—but these rules had the force of law under NRA and governed timber harvesting practices.

The Forest History Society has done a lot to bring out the history of how that came about, primarily through the efforts of David T. Mason. Mason was reacting to an economic problem. The economic problem was overproduction of lumber, failure to achieve this lovely little supply and demand balance that I am so fond of. Chronic overproduction and no way to control it.

They had tried to control it by marketing devices, and the Federal Trade Commission had repeatedly knocked the industry down as functioning in restraint of trade. They had no way to deal with that. David T. Mason came up with a beautiful idea that if you would all go on sustained yield, this would greatly reduce the apparent over-abundance of market supply of timber. He got some positive response to that from some of the more forward looking people in the industry, but never enough to get anywhere, really, until the NIRA came along. Then he became, as I recall it, the administrator for the lumber code.

Obviously, for economic and political reasons both, he couldn't invoke a sustained yield constraint in the lumber code. But it's interesting that he went as far as he did. He got in there a provision of brownie points. The lumber code, if you remember, had a very strict allocation scheme where the amount that individual mills could produce was limited, fixed. But you could get brownie points if you were on sustained yield. If you were on sustained yield, you could get a 10 percent bigger production quota than you otherwise would have, which I always thought was a fascinating device.

The other thing that Mason did was to get this code of forest practices in article 10 put into effect, which had, I think, the effect of making it much more difficult for a lot of the marginal producers to get into the market by cost-cutting that butched up the woods. There were practices that a good many parts of the industry were willing to accept and go along with, as long as they knew that
Vaux: all the other boys would have to accept it, too, and that if they adopted those practices, their competitor couldn't go and butch things worse than they were butching it and get that advantage.

I think there was general acceptance of that by a large segment of the solid landowning part of the industry, primarily because of this big work that Mason had done.

Then the NIRA was tossed out only a few months after article 10 became effective, but interestingly enough, a number of the trade associations, including the Western Pine Association and the West Coast Lumbermen's Association, retained the forest practice rules from article 10 as voluntary rules, but they urged and cooperated with their members to try to get them to comply with those rules voluntarily. That had some effect, I think, on causing some restraint.

Then it was about five years after NIRA was declared unconstitutional that the state forest practices acts began to develop, specifically, first the forest practices acts in Oregon and Washington and Idaho, and then as soon as the war was over the one in California.

I think there has been a general misunderstanding of what happened there that's rather unfortunate, in many ways.

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Vaux: Coming on to 1941, the Forest Service was making a big play to get legislation passed to permit federal regulation of forest practices after the NIRA folded up. When I first came into the field, the big issue was federal regulation. There was a widespread perception that what the industry did in the West was to work for state forest practice acts as a way of reducing the political heat for a federal forest practices act.

It is, indeed, a fact that the Oregon, Washington, and California forest practices laws were all passed primarily with the positive, direct working of the industry for those laws. But as I look at it in perspective, I would see the business of heading off federal regulation as probably a secondary interest and concern, because I think a majority of the substantial elements in the industry still wanted some form of regulation as protection against the elements in their own industry that were both cutting their throats economically by bad forest practices and curtailing the long-run prospects for timber supply at the same time.
Vaux: So I think the industry definitely wanted those acts in their own self-interest. And the acts were all drawn up, as evident in their statement of purpose, in terms of the long-term economic interests of the industry. That appears in the statutory language. So I think their interest there was a positive one, not a defensive one, although that may have had some effect. I think it was much more positive than just defending against getting put under federal controls. That added a little spice to the fray, I think, to put it in those terms, but I think there was an economic interest in state forest practices acts.

I said I thought it was unfortunate that these historical developments had been lost sight of because people have forgotten. I've found that forest practices regulation was really introduced at the behest of the industry, for good and sufficient reasons.

What the industry is really concerned about now isn't state regulation. What the industry's concerned about now is who will control state regulation? The original forest practices acts were all drawn so that the industry controlled what went into the regulatory scheme. That's what they lost in California in 1972, when the old forest practices act of 1946 was declared unconstitutional on that very ground. The judge said giving the industry the majority representation on the controlling agency is setting the fox to watch the henhouse, and that's unconstitutional.

It's the fact now that the regulatory board in California has a predominant number of public members, so that the industry can't necessarily control it, that they find burdensome, not the regulatory process itself.

Indeed, I've heard John Callahan, who was the lobbyist and executive vice-president for the California Forest Protective Association--it's the long-standing organization of large private forest landowners in California and does their political work for them--speak to that. The industry was so opposed to Assemblyman Ed Z'Berg, whom I referred to earlier, prior to the passage of the new forest practices act in 1973. They saw Ed Z'Berg as spearhead for the environmental intervention into the forest practices situation, where they thought the environmentalists had no business.

I know that the industry actually contributed substantial financial sums to the defeat of Ed Z'Berg a couple of times when he was running for office. Despite that, five years later I heard John Callahan say the lumber industry never had a better friend than Ed Z'Berg. John, on his experience, perceived that the regulatory
Vaux: act was not just a device to get in the industry's hair, but to protect it from otherwise overwhelming political forces that were going to put the industry out of business.

Steen: This is getting a step away from forest economics, but along the same line. What was your reaction five or ten years ago to the EPA-proposed national standards for state forest practice acts? It's the same sort of concept, isn't it? Didn't get very far, but the Journal of Forestry had an article about it.

Vaux: My own reaction is, the states have grown up enough so it's better to let them handle it. We've been through pretty much the same thing, really, in terms of the best management practices, which was an alternative that was adopted to having national standards for forest practices acts.

I don't see any great merit in national standards to govern forest practices, even for the Forest Service. Practice of forestry in all its dimensions and in the broadest sense, it seems to me, is a highly localized matter. The intensity with which it should be practiced, and therefore the means that you should use, the end product mix that you should be interested in in terms of a multiple-use complex, the political constituencies--I firmly believe that forestry is basically a public policy and therefore has strong political components to it--that's going to be different in every region.

It seems to me that in that kind of a context, it's very hard to come up with anything except such broad and general nationwide standards that they're going to have to be interpreted and interpreted and interpreted to apply to each regional situation. Then you might do much better to face that job and develop the regional standards, in which case the local people would have a lot more confidence in them than if they were something sent down from Washington.

Steen: In Santa Cruz, there was quite a controversy over the elimination of the county forest practices act because the local people felt they should run that.

Vaux: Well, you don't have to be consistent on these things.

Steen: You must be an economist. [laughter]

Vaux: That is, superficially consistent. The distinction I'd draw there is, first of all, it's a heck of a lot further, geographically, politically, culturally, economically, from Sacramento to Washington than it is from Santa Cruz to Sacramento. So they are not necessarily parallel problems.
Vaux: Secondly, there's the question of what's the value structure that's involved. What is the level that ought to control forestry policy? I think there could be an argument, in certain situations, that the county level perhaps ought to be controlling. In California, I think the argument is the other way, that the state level ought to be controlling, because the constituencies that can stand to benefit from better forest management, whatever that means, those political constituencies are far removed from the site of production. The people at the sites of production have very little understanding and perception of the political realities of the benefitting constituencies. Any given county is too small to embrace both sides of that equation. You see, this is an economic answer. The supply is in one county and the demand's in another. You can't bridge that organizationally at less than the state level.

Steen: That's all.

Lage: Any further comments?

Vaux: Oh, not at this point. I'll think of those tomorrow and write you a letter.

Lage: All right, good.
A Complex Organizational Structure

Lage: We are going to start out with the period when you were dean of the forestry school, 1955-65. Let's begin with a question about how you were chosen to be dean.

Vaux: I don't know very much about how I was chosen to be dean. That came about in the spring of 1955. Professor Fred [Frederick S.] Baker, who had been my silviculture professor, was the second dean of the School of Forestry, following Walter Mulford when he retired in 1948. Professor Baker was reaching retirement age in June of 1955. In those days, I think the selection procedures for both administrative officers and faculty were quite different than they are today, and I'll make a comment on that later on.

One afternoon I was sitting in my office and the telephone rang. It was Harry Wellman, who at that time was the university's vice-president for agricultural sciences. He asked me to come over and see him, and I went over and he offered me the job. It was the first I'd heard of it, and that was it.

Lage: It's not done through the forestry school itself?

Vaux: I don't know what confidential procedures went on before that. I know there were letters written. Sam Dana [Dean of the University of Michigan's School of Natural Resources] once said he'd gotten a letter saying they were making a search, and he told me--this is not very modest to say, but I was always pleased with it because Sam was perhaps my favorite person—he said he wrote back, "What are you conducting a search for? You've got the best man right there." So that was always nice to have. So there was a search conducted, but naturally I didn't know anything about that.
Lage: You didn't get in on that?

Vaux: No.

Lage: What does a deanship entail in terms of responsibilities?

Vaux: Mostly responsibilities and no authority. [laughs] That's true of any academic administrative post in the University of California, I think. There's a lot of administrative responsibility, but the nature of academic governance at Berkeley is such that deans—even in those days, when I think deans had more power than they do now—had to exercise their power in a very, very indirect and careful way. The faculty, through the influence of the committee system, has very strong influence on what goes on at Berkeley. My impression is that this faculty control is unique, but I don't have that much experience elsewhere.

You know the comments that were made during the FSM period about the administration being useful to keep the sidewalks clean. There was some germ of truth in that, that administrators aren't highly regarded in the university. So for that reason they aren't given very much authority.

Lage: Would this have been faculty within the forestry department or university-wide?

Vaux: No, probably less in the forestry faculty than most departments, but I'd say characteristic of the Berkeley campus.

Lage: But who did you have to answer to, your own faculty or the university-wide faculty?

Vaux: Depending on the issue, to some degree both. I think in forestry we had an unusually favorable situation compared to many departments that I know because the faculty, for a variety of reasons, was quite well unified. There are many faculties on the campus that aren't unified, where they're split right down the middle, and one half doesn't speak to the other half, or there are strong minority cleavages.

As I look at the Berkeley campus, that seems to be the frequent pattern. Fortunately, I don't think we've ever had that. There were often differences of opinion, but once the faculty had thrashed things out and a majority view was developed—and I think a lot of care was taken always to give time for a substantial consensus to emerge—but once that had emerged then, with one or two exceptions which I'll mention later, there was never any major cleavage in the faculty. This made this kind of a division of authority between the administrators and the faculty a lot easier to manage than if there had been cleavage.
Vaux: The line of responsibility and authority was directly from the dean to the chancellor. At the time I was dean, there were no provosts on the Berkeley campus, so the line of approach was directly to the chancellor. That was a very helpful position to be in because you had no hesitation in raising problems with the chief campus officer. For any administrator, that's always a desirable thing to have, as we'll discuss later.

Probably one of the things the forestry group lost when it was reorganized into the College of Natural Resources was that there was no longer that direct reporting to the chancellor; that was a significant negative feature of that development.

Lage: What about the line to the university-wide Division of Agricultural Sciences?

Vaux: That, interestingly enough, was actually closer, in some regards, than the line to the chancellor's office. The vice-president of agricultural sciences was previously the university dean of agriculture. They were somewhat comparable jobs, just different terms in relation to the organization of the president's office. The vice-president of agricultural sciences had a council of all of the deans in the statewide division of agricultural sciences. That group that the vice-president worked closely with was a smaller group, and therefore a more intimate one, than the chancellor's council of deans. Those relations were very close.

The council of deans, even though it met once a week, was a considerably larger group, I suppose almost three times as big, and the chancellor's office was concerned with a much greater diversity of problems than the vice-president of agricultural sciences was concerned with--at least at the level of his "cabinet," the group of deans that he worked with.

Because of its organizational structure, the school of forestry really included two elements. Once was a department of instruction and research. Virtually all the departments at Berkeley, which are the teaching units, are called departments of instruction and research. There's a budget that comes through the chancellor's office for the departments of instruction and research. But, at the same time, the School of Forestry and also the then College of Agricultural Sciences were units of the statewide Agricultural Experiment Stations. They were separately budgeted, and the authority for that budget was in some obscure way divided between the chancellor and the vice-president of agricultural sciences. But the vice-president of agricultural sciences was really the key person in the determination of the Experiment Station budget.
Vaux: All our faculty were 50 percent teaching, and 50 percent Agricultural Experiment Station research. So, in effect, half our budget was in the department of instruction and research category, and half our budget was in the Agricultural Experiment Station budget (speaking broadly; the percentages weren't that precise, but it was roughly half and half). Budget negotiations between the dean and higher authorities were structured so that the main budget negotiations for the department of instruction and research were with the chancellor's office, and the main budget negotiations for the agricultural experiment station budget were with the university dean of agriculture.

Lage: It sounds very complicated.

Vaux: It was very complicated. I had spent a couple of years--more than that, actually--one place or another in the federal government in Washington and had gotten some acquaintance with the organizational structure of the federal government, which I felt was pretty complicated. But when I got introduced to the organizational structure of the University of California, that just blew my mind because it was far more complex and sometimes very difficult to trace where the actual appropriate channels of authority were.

Lage: How clear were the lines of authority then? How long had Berkeley had a chancellor when you became dean in '55?

Vaux: The chancellors first came in a few years before President Sproul retired. Clark Kerr was the chancellor when I became dean and continued so for a couple of years after I became dean, and then moved into the presidency when Sproul retired [1958]. The chancellors must have been set up about 1951, along in there sometime [1952].

Lage: It must have still been a time of some flux.

Vaux: It was the beginning of that period of tremendous growth of the state-wide university, with new campuses being proliferated all over the place and great organizational changes going on along with that.

Period of Budget Expansion

Lage: Maybe we should talk about this more in terms of specifics, by looking at some of the major issues and problems and changes during your tenure. Is there a particular place you want to begin with that--curriculum, or faculty?

Vaux: I suppose one thing that serves as a bit of a focal point was the budget expansion, which had started in Dean Baker's administration. And of course, after the war, there were a tremendous number of GIs who came
Vaux: Back to the university, and forestry was a very popular field among them. So forestry enrollments were at that time among the biggest that they had known. That served as a basis for budget expansion. There always is a lag in budget expansions between cause and result, so that when I became dean, budget expansion was under way, and that lasted pretty much throughout the ten years of my deanship.

A measure of one of the things that was going on was that in January 1955, six months before I became dean, there were thirteen full-time faculty positions in the Department of Forestry, and by 1965 that had grown to twenty-four or twenty-five. It was roughly a doubling of the effective budget during the time I was dean, and naturally there was a lot of time devoted both to seeking the budget increase, and to staffing it when the money was available. That was one of the backgrounds.

I should say that a good deal of that budgetary expansion reflected the initiation and growth of the Forest Products Laboratory, which actually got underway in a major way in 1955, when the new laboratory was opened at Richmond. I had had nothing to do with the securing of the funds for that lab, but I was on hand for the actual operational part of the expansion phase of the lab.

Major Faculty Restaffing: Recruitment Criteria

Vaux: That coincided also with a major restaffing of the faculty. It's always kind of anomalous because one of the basic concepts of forestry, on which there's a lot of focus, is the notion of sustained yield. One of the premises of sustained yield is that you should have what's called a normally regulated forest growing stock. This means that you should have an equal proportion of the forest in each age class, from zero up to the maximum age of the trees that you want to grow. So you have this nice even distribution of age classes. That would be the ideal pattern for personnel in any organization; then your replacements because of retirement come at frequent and regular intervals, and you don't have any crisis.

Forestry's faculty has never been organized that way; it's always been a single-age class. This corresponds to the fact that first you get an initial faculty group when the thing's established. They're pretty much of an age so they all retire at once. Then you get your faculty expansions at times of great budgetary increase, and they're pretty much of an age class, so they all retire at once. So the forestry faculty has always been this single-age class proposition.
Vaux: When I went on the faculty in 1948, most of the faculty were the people who had been my teachers when I was a student there. There were a few additions of my age class, and then at the time I became dean, virtually all of those old-timers were in the process of retiring and had to be replaced.

Lage: So you were an intermediary age group.

Vaux: John Zivmuska, Bob Colwell, and I, and Ed Stone, to a degree; we were roughly a similar age class. Bob Cockrell was really the one that was sort of intermediate. He was a few years older than we were and came in the mid-1930s, whereas the rest of us came after the war, so that made a kind of a natural break.

So there was a restaffing job that had to be done, and one of my early jobs was recruitment of replacements for people like Baker, and [Myron] Krueger, and Joe Kittredge. That went on for pretty much the first half of my regime as dean.

Lage: That, I thought, would be a good topic of discussion. Your role in hiring, what the criteria were, things maybe that aren't officially documented.

Vaux: Yes, well, it was a much less structured and formal process than it is today because the requirements for non-discrimination in employment were not in effect in those days; that issue hadn't arisen. That was one of the areas where deans and department chairmen did have quite a lot of authority, as well as responsibility. Naturally, we consulted with the faculty widely, but the basic selection process was, to a considerable degree, in the hands of the dean.

There was not the tremendous and almost unbearable volume of paperwork and formal procedures for interviewing and so on. I took a couple of trips around the country, head-hunting: going to various campuses, and talking to people who were tops in the fields that we were interested in, and finding out who the good young people were. I don't think there were any particularly hidden requirements. I don't think there was very much in the way of formal recruitment guidelines, other than the traditional ones of the university, that it had to be somebody with a Ph.D. degree and with substantial capability to do research.

That, of course, was reinforced because of our Agricultural Experiment Station role, where half the appointee's salary was going to come from a research budget, so there was a lot of emphasis on research capabilities. But I think it was, to a good degree, a judgmental matter. We'd solicit letters of recommendation from the people we knew that were tops in a particular area and be guided by them.
Vaux: We'd go and interview the people. Contrary to the way things are now, we rarely brought somebody to the campus for an interview; I'd go talk to them.

Lage: They didn't come out and meet the other faculty?

Vaux: In some cases they did, but it wasn't a standard operating procedure the way it is now.

Lage: It seems like there's a lot of camaraderie with the students in the forestry school.

Vaux: Oh, tremendous, yes. Tremendous.

Lage: Did personal factors come in, then, when you were choosing faculty? Did you consider how they would fit in?

Vaux: Oh, yes, I think very much so. They did at that time. I think it would be much more difficult for those factors to come into play now. They would still have some effect, but I think, given the kinds of formalized, documented procedures that have to go on, why the informality that I used would have not been possible. There was just much more role for individual judgment, and the "feel" of the dean, than you can possibly have now with all the structure that goes into the hiring procedure.

Lage: Were you primarily going after the young, recent graduate?

Vaux: Yes. Most of our positions were budgeted at the assistant professor level, and there was still kind of the philosophy at that time that if you got an appointment at the University of California, you would eventually qualify for a tenured appointment; it was a career appointment. We didn't follow the Harvard pattern of kicking all the assistant professors out after four or six years as a matter of policy. The campus policy was quite the reverse of the Harvard pattern; it was not unique in forestry, it was just the way things were done on the Berkeley campus.

Lage: So the expectation was that they would go on to a tenured position?

Vaux: Yes.

Lage: Was Berkeley a desirable place?

Vaux: Oh, I think highly desirable at that time. It was a very positive stance from which to recruit faculty because it was before Berkeley had experienced the time of troubles. The salary scale was as good as any in the country. We were able to tell people, "If you make good as an assistant professor, you'll go on to a tenured position"--it was
Vaux: essentially a career appointment. The smog wasn't as thick then, so Berkeley was an attractive place to live; the rents were modest then. I think it was regarded as a plum.

You asked whether they were all assistant professor appointments. Most of them were; there were two exceptions to that. One was the appointment of Fred Dickinson as director of the Forest Products Lab, which was actually made before I became dean, but it was known at the time that appointment was made that I was going to become dean. So Dean Baker did the very generous thing of, in effect, letting me make the final decision on the appointment and accepting my recommendation for that. And Fred was appointed at the full professor level.

Special Needs of a Professional School in Faculty Appointments and Promotions

Vaux: Then there was another tenure appointment in the case of Professor Dietrich Muelder. One of the ongoing problems that I think has always characterized faculty appointments in the forestry school, is a rather difficult one to explain. But, at least in my mind, the two characteristic fields in forestry are silviculture and forest management. Those are fields of study and fields of teaching and fields of activity, but those are, to my mind, the core professional fields as distinct from other fields in forestry, which are basically research-oriented fields. But silviculture is doing the thing on the ground, and forest management is doing the thing on the ground, so that the sense of professional forestry application, as distinct from doing research in forest entomology, or forest economics, or forest soils, ought to be dominant in those fields.

This is one of the places where the general university view on faculty appointments created difficulties for a field like forestry, because where the primary criterion for appointment is research productivity, that doesn't fit very well with the primary objective of professional practice, which is accomplishment on the ground. So when you submit an appointment recommendation for somebody in silviculture or forest management, the best people—who have great expertise in the field applications and great experience in the field applications—just won't get by the budget committee [Committee on Budget and Interdepartmental Affairs].

Lage: They're the ones who pass judgment on your recommendation?

Vaux: They pass the final judgment, yes.
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**Vaux:** This is the budget committee of the Academic Senate, which is advisory to the chancellor, but which exercises great power in appointments and promotions because the chancellor, while he doesn't have to accept the recommendations of the budget committee, rarely goes against them. This is one of the places where the Academic Senate wields very great effective power over what goes on in the university.

**Lage:** Were they understanding of your needs as a professional school?

**Vaux:** That would depend upon the personnel of the budget committee. We finally found that every time we wrote a promotion letter or an appointment letter, which was the letter that went along to the budget committee, we had to re-explain the particular problems that were involved here. In some cases you'd find a budget committee that was sympathetic, and in others you'd find a budget committee that was antagonistic.

The school has suffered some very serious losses over the years as a result of this lack of congruence between an essential need for the school and the campus-wide criteria for appointments and promotion. In fields like forest economics, or forest soils, where the research area is clearly designated, this is no particular problem. The problem arises particularly in areas like silviculture and forest management. Rather than being able to get and appoint an experienced field silviculturist or an experienced forest manager, who has on-the-ground experience in managing a forest, what you have to do is take a forest economist who's got a research record and who has some interest in forest management and try to get him appointed to teach forest management. Or in the field of silviculture, you'd take a plant physiologist who has a field adaptation of some kind and try to sneak him through. But the basic problem is that his ongoing work has to be the research needed to get himself promoted.

**Lage:** He has to continue research as a forest economist or plant physiologist.

**Vaux:** From the time he's appointed, he becomes obsolete, or increasingly obsolete, for the thing that you really need. This, I think, is an ongoing, continuing problem of the forestry school.

**Lage:** Was there ever any thought to actually making different promotional criteria?

**Vaux:** Forestry just doesn't have enough oomph in the general university scheme to do that. It's significant that the medical school and the law school, which are your strongest professions, don't have the same scheme for appointments and promotions. They have a different salary scale, they have a different review procedure, in which the Academic Senate
Vaux: concurs, but they have a much more in-house review procedure. So the problem, I think, is not the same for them as it is for the smaller, less prestigious professional schools.

Well, this all came out because I was talking about the appointment of Professor Muelder, who took Professor Baker's place as silviculturist. He was just a pure happenstance as far as I was concerned, but the answer to a dean's prayer under these circumstances. He came here on a reverse Fulbright in 1956.

He was a German forstmeister, associated as a docent with the forestry school at the University of Göttingen, in Germany. He came over on this grant, which essentially was a sort of sabbatical for him. We got to know him because he was here for that year on a grant to study. He was a very impressive person, both personally and professionally. He had all the things that you couldn't find in the academic context, among Americans. He had actually run a forest, for years. And he had a natural gift of enthusiasm and communication. So we were able ultimately to wangle a tenure appointment for him. I think that was a real asset to the school because he brought a point of view and a spirit and a perspective that was different from the ingrained research perspective.

Lage: What about the European perspective?

Vaux: And the European perspective, too. The only unfortunate thing about it was that after six years he had to resign and go back to Germany. He had a very favorable retirement outlook there because of his previous service in one of the state forest services in Germany. If he'd stayed here any longer, he would have had to surrender that retirement. He'd been appointed at a tenure level here and was of an age where he would not have a terribly long period to develop his own retirement here. He didn't feel he could stay on, so he left shortly before I was replaced as dean.

But those were the two appointments made at a tenure level, and then the others were people like Paul Zinke, and Bill Libby, and Dennis Teeguarden, and Arnold Schultz, and John Helms, all of whom came in at the assistant professor level.

Leading Faculty Members

Vaux: Let me talk just briefly about the leading people in the faculty who were there and weren't people whose appointments I had anything to do with because they were the faculty people who actually were the dominant ones during my tenure. John Zivnuska, of course, was one of those.
Vaux: Bob Cockrell was, as I said, the transition age class, so he had influence from that standpoint. And also Bob was very active across campus as an associate dean of the graduate division for a good many years. That was extremely helpful, particularly in relation to curriculum matters, because it came at a time when we were trying to expand and strengthen our graduate degree curriculum. So Bob Cockrell's influence was very helpful there.

I already mentioned Dickinson. Then there were a number of other people, Professors [Harold H.] Biswell and [Harold F.] Heady, in range management, who did a great deal to build that field. Then there were two other people, whose role was significant in a variety of ways, that I should mention. One was Professor [Percy M.] Barr, who was the youngest of the old guard. He was a little bit younger than men like Baker and Krueger, but still definitely older than those of us of the younger generation.

Professor Barr was a very powerful person, in terms of the faculty and cross-campus relationships. But shortly before I became dean, he unfortunately began to develop major symptoms of Parkinson's disease and suffered from that throughout my tenure as dean and until he died. That was a very tragic affair because he gradually lost a good deal of ability to communicate. He wasn't in a position to retire—

Lage: How old would he have been?

Vaux: He would have been in his latter fifties at that time and moving into his sixties, perhaps. For personal reasons, he wasn't in a position to retire, and I felt that the university policy reflected in that situation was magnanimous, because his ability to contribute gradually dwindled, and by the end of his life, his ability to communicate orally was nominal.

There was no provision, at that time at least, in the university scheme of things for disability retirement without tremendous financial loss. The administration never put any pressure on us to do anything other than keep him on, and he did a remarkable job of overcoming his communication problems, by committing almost everything he had to paper, in forms that the students could use. Then he developed this technique where the students would, under his guidance, perform sort of their own seminar, where his role was more one of feeding materials to them, and organization and structure, but he didn't have to use oral communication so much.

So he kept on teaching a small seminar right up to the time that he died, but that was a very tragic thing because I'm sure he would have been much more effective and instrumental had his health not been impaired.
Vaux: The other person whom I should mention because he had profound influence on the curriculum, which I'm going to talk about next, was Starker Leopold. Now, at that time the School of Forestry was a one-department school. Most of the small professional schools are one-department schools. There's a Department of Education and then a School of Education, and the dean is the department chairman. There's a Department of Social Welfare and a School of Social Welfare, and forestry was the same way. It had one and a half departments. It had a School of Forestry, and a Department of Forestry, and a Forest Products Laboratory. The Forest Products Laboratory was a separate budgetary unit, but it wasn't a department of instruction and research; it was a laboratory.

In addition to the departmental faculty, then, there was the faculty of the School of Forestry. The faculty of the School of Forestry included all the departmental faculty, and then a member of the faculty of each of the departments where the school required a course in its curriculum. So there would be a professor of botany, and a professor of zoology, and a professor of soils, and professor of agricultural economics, a professor of engineering, and so on. Depending on the curriculum content, there would be professors from all of those departments who were members of the School of Forestry faculty as distinct from the departmental faculty.

The significance of this is that organizationally the curriculum has to be approved by the School of Forestry faculty. A department just can't propose its own curriculum and get approval from the Academic Senate; it has to be generated, really, and approved by the school faculty. So it's a broader, more diversified group.

Lage: So if it were the Department of History, it would be approved by L&S.

Vaux: It would be approved by the faculty in the College of Letters and Sciences, yes. That's right.

Lage: In your case the department's--

Vaux: Curriculum was approved by the school faculty, yes.

Lage: So you had sort of an oversight from these other departments.

Vaux: That's right. That's right. And, as I'll point out, that became quite important in the development of the curriculum, and Leopold was a key factor in that. At that time, Leopold was a member of the Department of Zoology. You can find out all about that when you interview Professor Zivnuska. One of the accomplishments of his regime was to get Leopold transferred from zoology to forestry. This relationship functioned earlier in terms of Leopold's membership in the faculty of the School of Forestry.
Undergraduate Curriculum Revision: Starker Leopold's Role

Lage: Let's talk about curriculum issues now.

Vaux: I would say that, prior to 1955, the curriculum in the forestry school had been fairly stable for twenty years or so without too much change in it. Now you had a larger and younger and differently trained faculty group. You had a field that had advanced and become more complex because of both research and practical developments. So the time was ripe and the circumstances were such as to indicate a curriculum revision at the time I became dean.

This was undertaken, I think, with a lot of enthusiasm by the faculty because they were young, well-trained people in a position to offer courses that had not been offered before. They had to be given outlets and support for their interests, entirely apart from the details of what the curriculum ought to be. I guess as a result of having spent a good many years of my life revising curricula, having started it at Oregon State when I went to teach there, I have a jaundiced view of curriculum revision, which some faculties seem to be always engaged in.

It seems to me the main point is to have able teachers and let them teach whatever it is they're adept at teaching and want to teach. That point was a very important guide to the curriculum, rather than the sanctity of any particular subjects.

Lage: You don't start with, "What should the ideal forester be presented with?"

Vaux: Well, that's the conventional way of going about it, yes. But I really don't think that makes very much sense. The upshot of it is that you have good teachers and let the good teachers teach. Because I think that's what you're going to get, whether the curriculum specifies that or not. But, at any rate, there were all kinds of reasons for revising the curriculum. That properly breaks into two parts: revision of the undergraduate curriculum and revision of the graduate curriculum.

As far as the undergraduate curriculum was concerned, there were two major revisions during my tenure as dean. The one in 1956 resulted in a considerable elaboration of the number of courses that were offered in the forestry department in response to the larger staff. There was more opportunity to offer courses in forestry: greater specialization in those courses as a result.

Those had to all be worked into the curriculum in some way. Then there was a subsequent revision at the end of my tenure, in response to the advent of the quarter system, and I'll comment on that later.
Vaux: the '56 undergraduate curriculum revision went forward, the committee that developed that first curriculum proposal was a very dedicated group of people, and they all wanted to get a hard, rigorous, professional curriculum. So they came out with a proposal that was quite rigid. They attempted to do exactly what you said--provide "ye complete forester," in terms of his technical orientation.

I had, personally, some misgivings about that, but obviously the curriculum was something that had to have the approval of the faculty; it was nothing a dean had anything very much to say about. This went through the departmental channel, and this rather rigid "ye complete forester" curriculum came forward from the department. I thought it was too tight and lacked the breadth and liberalism that I thought was appropriate. It came up to the School of Forestry faculty, and there Starker Leopold blew his stack and spoke in very uncompromising terms about how this was the wrong way to go.

As a result of that, the curriculum was re-studied. Instead of trying to produce "ye complete forester," what eventually was produced was a core curriculum, with three undergraduate options in it. One focused on forest management, and one focused on wood utilization, and one focused on range management. And at the same time, there was a good deal more flexibility in the curriculum as a whole--room for alternative electives and that sort of thing--than there had been in the one first proposed by the department.

Lage: Were the alternative electives required, or were they just allowed to take their electives?

Vaux: They were required to take a small number of electives that weren't professionally oriented, but not very many. I think one thing you have to perceive to understand this issue is that forestry itself is a synthetic subject, not an analytical subject. Unlike zoology, or physics, or chemistry, or economics, where, as you specialize you go deeper and deeper and deeper into the same area of subject matter, forestry is trying to synthesize most of biology, some of engineering, most of social science, some geology and hydrology. They try to synthesize all these things.

So I have always contended that an undergraduate forestry education wasn't a bad liberal education, if you think of a liberal education as a diversified one. It's lacking in the humanities, but I think there are probably other things besides the humanities that can give you a liberal education.

Lage: What kind of social science came into it, other than economics?

Vaux: Political science, and more recently other social sciences, including sociology, anthropology, and history.
Lage: Would the courses be taken in those departments, or taught in reference to forestry?

Vaux: Some of each. Particularly at the graduate level this would come out more. At the undergraduate level, beyond the basic sophomore level course in economics, or history, or political science, or sociology, it's pretty difficult both to motivate, and for even a motivated student, to get much, unless there's been some particular orientation to the forestry aspects of this thing.

So as the curriculum has developed, I think it's fair to say that from the upper division level on, the social sciences are brought in, mainly where there's some capacity in the department to teach those in the department.

Lage: Where you have those faculty.

Vaux: That's right.

Lage: How many of the undergraduates would go on to graduate school? Was that a common course to follow?

Vaux: Yes, that was a common thing. The undergraduate curriculum was drafted so as to give people a very solid foundation for going on to graduate work, much more solid than at some of the other forestry schools. In other words, people would have to take some advanced plant physiology and some advanced economics as undergraduates, whether they were going on to graduate school or not. But this, then, gave them a good basis to go on to graduate school. I'd say that on the average, probably, twenty- or twenty-five percent of the graduates went on to some form of graduate work. I don't know what the figure is today, but this would have been characteristic in the fifties and sixties and early seventies.

Change to the Quarter System

Vaux: Then at the end of my tenure we were approaching the change to the quarter system, and there was a reconstitution of the 1956 curriculum, adapting it to the quarter system. I think the quarter system enabled us to do better what we tried to do in '56. By that time--despite the fact that there had been a difference in view in '56 over which way to go--after working with that curriculum for almost ten years, I think the faculty was happy with the philosophy behind it and looked on the change to the quarter system as a place where we could do better what we'd been trying to do before.
Lage: So you saw the quarter system as a positive--

Vaux: I saw the quarter system as a highly positive thing and was one of the advocates of the quarter system, not just internally but campus-wide, because of this very thing that I spoke of—the synthetic nature of the profession of forestry, rather than the analytical nature. This is not to denigrate forestry, but in some sense you're trying to educate a jack-of-all-trades, not a highly specialized person.

By definition of a school, our undergraduate curriculum was only an upper-division curriculum. We had a lower division set of prerequisites, but they didn't involve any forestry courses, and they could be pursued anywhere. It was so designed, in part, to facilitate the ability of people to take the preforestry curriculum at a junior college and then transfer to Berkeley at the end of the sophomore year.

There are a variety of political reasons for that, but that's essentially the way it was.

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Vaux: The arithmetic of the quarter system versus the semester system is the key thing here. On a semester calendar, you have four semesters with five courses each, which is twenty instructional slots. (This is conventionalized, but illustrates the point.) On a quarter system, you have six upper division quarters, with four courses per quarter instead of five as under the conventional semester system, so that's twenty-four slots.

Now, you compare twenty with twenty-four, that's a 20 percent increase in the number of courses that you can give. Consequently, it's a 20 percent decrease in the amount of time you give to each of those courses. But if you're in a synthetic field, where you're trying to cover a whole lot of bases, this is very advantageous. So the quarter system, from the standpoint of undergraduate instruction in forestry, I think, was a very useful and valuable thing.

I haven't been involved in it, but I know the department has had some real difficulties in trying to go back the other way, now with the change back to the semester calendar, and figure out how to constrain that flexibility, shrink it by 20 percent, without losing some very important things out of the curriculum.

Lage: It's probably harder to go back.

Vaux: Oh, much harder to go back because easing the constraint enabled us to be a lot more efficient in curriculum terms. The students picked this up right away because they felt the quarter system was a terrible speed-up.

Lage: Yes, I was going to ask you then, was there the temptation to give as much in that quarter course as you had in the semester course?
Vaux: I don't think it was entirely that. I think it was the shift from trying to go into so much depth in a subject, and I think it was generally the case that the students had the idea, "Well, the first three or four weeks of the semester, you really don't have to do very much," and then, on the quarter calendar, they felt they had to start running from the very first day of classes. The professors, too.

Lage: And they did.

Vaux: And they did. So I think the quarter system enabled the undergraduate curriculum to better do some things that it was already trying to achieve, but because of that constraint, hadn't been able to quite reach. In connection with that 1956 revision, these undergraduate options—particularly in the introduction of a range management option and a wood utilization option—were innovations and paved the way for strengthening of those fields over the years, as the faculty of the Forest Products Lab and the departmental faculty who were interested in those areas were able to find more room for their talents, and it laid the groundwork for graduate work in those same optional fields.

Lage: In wood utilization, if you didn't want to do graduate work, where might you find employment?

Vaux: Well, almost anywhere in the forest products industry, and to some degree in wood utilization research, of which there's quite a substantial amount throughout the country.

Lage: Was that a consideration for the students—thinking about employment?

Vaux: Oh, very much so; but all during my tenure as dean, employment opportunities were pretty good because it was a boom period for the forest products industry, and it was a boom period for the U.S. Forest Service, which was being better funded, and it was a boom period for the state Department of Forestry. And those were the three major markets for forestry graduates at that time.

Now the market has become more diversified. It had to because, to a degree, all three of those markets have collapsed. The new recruitment levels have shrunk, but at the same time those people who are graduating are having to diversify the fields they go into.

Lage: So this is a complicated interreaction—getting students into the school, what you need to offer them, and the employment opportunities?

Vaux: Yes, it's complex. But to some degree, you simply can't let the curriculum be dictated by the job market. That's really not a consideration. You have the idea of the kinds of jobs that they may go into, and you want them to be well-qualified for those jobs, but if the forest industry employment's going down, and the public service employment is
Vaux: going up, you don't change the curriculum to try to anticipate that because you just can't do it, and the differences in what the students really need to know for the two areas of employment aren't that significant.

Lage: You mentioned that the interests of students in forestry affects your budget.

Vaux: Yes, because the university budget now functions on an FTE [full-time equivalent student] basis. I think that's a real difficulty at the present time. We went through some ups and downs when I was dean, but the general trend of university growth was sufficient so that we weren't particularly adversely affected by the slump in enrollment that came along in the late fifties. There was a slump in enrollment then, but we recovered from that as the environmental movement came in, and by that time our curriculum was broad enough to interest students with environmental concerns. So I don't think that hampered us.

I think the present contraction in forestry at the moment is much more difficult to deal with, both because numerically it seems to be more severe than it's ever been before—not just at this campus, but everywhere. And because it's tied to some more fundamental constraints in the market for jobs like the Forest Service and the wood products industry, which themselves seem now to be declining after long periods of growth.

The previous declines in new job opportunities were a cyclical thing. Now this seems to be a long-term constraint. But we didn't have to face that kind of situation when I was dean.

Lage: Right, we don't have to solve that one today.

The Graduate Curriculum: Ph.D.s in Forestry, Wood Science, and Range Management

Lage: Shall we talk about the graduate curriculum?

Vaux: Yes. During the same period, 1955 on, there were equivalent changes in the graduate curriculum. Between 1950 and 1955, the school had been successful in getting a pretty well-established graduate program, with a master of science degree, a professional master of forestry degree, and a cooperative arrangement with other departments for awarding the Ph.D.

At that time, there was no Ph.D. in forestry, but students who were interested in forest economics could get a graduate program that led to a Ph.D. in agricultural economics with a forestry minor.
Vaux: student who was interested in tree physiology could get a Ph.D. in the plant physiology group, with an emphasis on forest physiology. And so on with soils, and entomology, and all of the other basic research disciplines.

The one thing you couldn't get a Ph.D. in was silviculture or forest management, the two crucial fields, in my mind. So, one of the thrusts was to try to break that bottleneck, and find a way to get a Ph.D. in forestry. That development came along, I guess in '56, '57.

Lage: I have '60 here.

Vaux: '60? All right, maybe it took that long. I know it was a slow process.

Lage: Was this something you would have been involved in?

Vaux: Very much so.

Lage: This is a lot of campus politicking?

Vaux: No, I don't think it was campus politicking. It was an attempt to make everybody involved in the process of approval of the curriculum aware of what the problems were, and what the needs were, and what the qualifications of the school were to do it. I think up until 1950 the campus had been resistant to accepting a Ph.D. in forestry. The earlier faculty, because of its origin, not coming out of a research background, wasn't perceived as one that really was appropriate to give Ph.D.s. Now we had a younger faculty, all of whom had Ph.D.s themselves and were members of the club, and so they could have a little more credibility in talking about the Ph.D. to the powers that be, across campus.

At the same time, that group learned enough about the realities of campus graduate life to perceive how to couch their program in terms that would look appropriate to the across-campus people. Now, if you call that "politicking," and in a way it is, so be it. But it wasn't politics in the sense of having to cultivate particular power figures in order to get a hearing, and that sort of thing. It was a much more--

Lage: Just to interpret the program?

Vaux: Well, both developing the proper kind of program, and interpreting it. And, at the same time that that was going on, shortly after that, Ph.D. programs in wood science and range science developed too, in very much the same pattern, for very much the same reason. Then, subsequently, in Zivnuska's administration when Starker Leopold came aboard, the range thing and the wildlife thing were very parallel to one another, and Leopold's arrival greatly strengthened the range side of things.
Range management had always been in a difficult situation. One of the original professors was Arthur Sampson, who Professor Mulford brought in order to build range management as a part of the forestry program. Of course, Sampson was a widely-respected teacher, and a very good research scientist, and really a founding figure in range management. But yet there was never the enrollment or the interest to justify a full-fledged program.

Forestry, perhaps, is a bit of an anomaly at Berkeley, and perhaps range management is even more of an anomaly at Berkeley. But obviously another factor involved was the outlook of the Davis campus on range management. They had an interest in range management, and a program in range management. There were people there who regarded themselves as range managers, so there was a continual friction between those two campuses over the range management thing. The intercampus problem was accentuated by some differences between individuals in their view of scientific issues. Sampson at Berkeley had a different view of the role of range burning than did Viehmeyer and others at Davis. Professor Love (Davis) stressed the use of agronomic practices in range management more than did Professor Heady. Such doctrinal differences tended to sharpen personal and campus conflicts. What resulted originally, at the undergraduate level, was a joint range management program, which was never very successful.

Eventually, this competition got, I think, somewhat modified and reduced, for a variety of factors. Davis grew, and their breadth in the area expanded so that range ecology became a broader concept than range management specifically. To some extent, the same thing happened here. With the addition of the wildlife group and the wildlife-range thing, it became a little bit more distinguishable entity from what was going on at Davis. Some of the personalities changed, so that there weren't the personal conflicts involved. So I think much of that conflict had been passed by, but that made some problems for me while I was dean, because I think Professor Heady, who was a leading figure in range management and was Professor Sampson's successor, always felt very badly that I was not supportive, wholly, of his desires to have a separate range management major and indeed a separate range management department.

I felt that the numbers just weren't there to justify this, and that such a unit even if established would not be successful because it wouldn't have the supporting numbers over time. Now possibly it would have, but at least I never saw any evidence that it could. So, in a way, the inclusion of the range management option was an attempt to solve that problem of aspirations of our own faculty for range management status.

I don't think that ever satisfied them, by any means. But at least range management still persists as a very strong element within the department's program, and my own hunch is that if it had been broken off as a separate unit, it wouldn't have survived at Berkeley.
The Master's Programs

Vaux: I should say a couple of things about the master of forestry, master of science thing, because that relates to broader things than just curriculum. Once the school was established as a School of Forestry in 1948 it was permitted to offer a new graduate degree that it had never offered in the past. Previously it had been offering the master of science degree. Once it became a professional school, it was then authorized to award the master of forestry, a professional degree.

The distinction between these degrees is not very widely understood, and I think is still under-appreciated. Beginning in 1955, the faculty began to take the view that they've held ever since, that the master of forestry degree was really the first professional degree in forestry. The undergraduate forestry degree is a bachelor of science degree and meets the criteria for a bachelor of science degree in any department. It's not a professional degree.

So part of this thinking arose from the concept that the faculty perceived that, quarter system or no quarter system, you could not give the education required for "ye complete forester" in four years. It had to be a five-year program.

Lage: But you only have the two upper division years, don't you?

Vaux: Yes, but you can count the lower two years because that's where all the foundations in mathematics and botany and zoology and general economics and all these things came in. So it was four years. From the very first time that the profession of forestry had a review of its education, way back in 1912, every review ever made by the Society of American Foresters has said, "The forestry degree ought to be a five-year program." But nobody (except Yale and Duke, which have graduate forestry programs only) has ever done it, for very apparent economic reasons.

So our faculty decided that the thing to do was to structure a five-year curriculum and then to make the first four years of that—in the forestry option, not in the range or wood utilization options, but the forest management option—make the first four years of that the B.S. in forestry, and then after the fifth year award the master of forestry degree.

That was the concept that lay behind the difference between the master of forestry degree, which was specifically that—the fifth year of professional training—and the master of science degree, which could be in any aspect of forestry, just as a Ph.D. could be. It could be forest entomology, it could be forest management. Admission to the master of forestry degree required the equivalent of this professional undergraduate four years. The master of science degree you could enter
Vaux: with a wide diversity of qualification, without all the forestry background. You might have to make up some of it, but if you were trying for the master of science degree, you didn't have to make up all of it, only that which was relevant to the particular area of specialization that you wanted to get into.

So the master of science degree, in concept, was again the specialized, research-oriented kind of thing. The master of forestry was the synthetic degree, more headed toward operations, practice of forestry, rather than research. So that distinction's clear enough; it's in all the books, but it's had an interesting, and to my mind, unfortunate history, in that the students all regarded the master of forestry as a more demanding curriculum, perhaps because it was synthetic, less sharply-focused on whatever their interest might be. So there have always been many more master of science candidates than master of forestry candidates.

Lage: Does one have more prestige than the other?

Vaux: Well, that's hard for me to say. I don't think this is widely-recognized. There's one place where it is recognized, and this is interesting in the broader politics of forestry education in California. The requirements for a professional forester's license in California include seven years of education and experience.

The basic requirement is seven years of experience, and four of those years can be met by forestry educational experience. So a four-year bachelor's degree in forestry counts for four years of qualification for the registered forester's license. When the licensing act was passed, interestingly enough, it provided that a year of professional graduate training leading to the master of forestry degree, was substitutable for one additional year of experience. But a master of science degree didn't meet that qualification because it was conceived as not being professionally-oriented and might mean forest entomology, or some specialized thing that didn't really enhance one's general practical capability to do forestry.

Now, the reason this is of some political consequence is that the University of California is the only state higher education authority authorized by the legislature to grant professional graduate degrees in fields other than education. The state university system can offer professional graduate degrees in education but not in any other field, except in collaboration with the University of California. And what that means, nobody knows.

So the net effect of this is that if you take a master of science in forestry at Berkeley or a master of science in forestry at Humboldt State, that doesn't count toward the licensing requirement. If you take the master of forestry at Berkeley, that does count toward the licensing requirement, and you can't take the master of forestry at Humboldt State or any other state college, because of this requirement that the
Vaux: university is the only institution authorized to grant graduate professional degrees. This restriction goes back to the Donohoe Act, which is an act of the legislature that completely reorganized the university and state college systems in the late 1950s and is really the legislative charter, the most recent one, for the university. The legislature wrote that language in there so as to prevent the state college campuses from all demanding medical and dental schools.

Lage: But it's affected forestry, and who knows what else.

Vaux: I'm sure the same is true for social welfare and other professional schools.

Women Staff and Students in Forestry

Vaux: I think I've pretty much exhausted the curriculum. Before we get on to other things, there was one thing that wasn't in the outline that I'd like to speak to. Of course, the School of Forestry was always, in some sense, a bastion of maleness, although we always had an occasional female student.

Lage: It must have been very occasional.

Vaux: No, it wasn't as occasional here as it was at some forestry schools. At some forestry schools, women just were not admitted, period. Here, I won't say there was ever any effort to go out and recruit women, but there were occasional women graduates right from the 1930s on, and a number of those people went on and made successful careers in forestry. There were never, I think it's appropriate to say, any real obstacles raised arbitrarily toward women. On the other hand, some concessions were made to facilitate women.

But at the faculty level, there never was a woman faculty member until two years ago, when Louise Fortmann joined the faculty. On the other hand, there were some ladies that played a very, very key role, particularly in the undergraduate part of the institution, and those were the succession of administrative assistants and senior secretaries. Particularly there was Miss Reid Venable.

Lage: You talked a little bit about her in the interviews on forest economics.

Vaux: Yes. And her successor, who was the administrative assistant all during my deanship, Birdie Weisbrod, who's recently died. And then my personal secretary when I was dean, Ruth Zapf. I probably shouldn't say so, but those women were a different breed from the kind of people who fill those capacities now. They had grown up in the university and with the
Vaux: university, and to a substantial degree, they epitomized a lot of the personal spirit of the university. These ladies were not only administrative people, but they were guides, philosophers, and friends to each and every student, and each and every faculty member.

I told you a little vignette about Miss Venable, and that was just typical of the role that they played, that was very central to the success, really, of the whole enterprise. And they had in their heads a whole lot of stuff that now has to be committed to the computer, and this just changes the whole style of operation.

Lage: They had a long tenure, it seems.

Vaux: They all did. Miss Weisbrod, who was administrative assistant during my tenure, was secretary when I was a student. That's when I first knew her.

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Vaux: The other thing I want to say about women is that I certainly believe that there never was any discrimination against women. That, I think, is evidenced by the fact that I don't think there's any record of women having been turned down who were qualified, and there were a number of women students. I suppose over the years, every two or three years there would be a woman student. There was a woman student who sat alongside me in all the classes I attended when I was here as a student, Jane Ulrich.

The concession that was made to women was over summer camp. Summer camp has always been probably the most important single part of the curriculum. Summer camp was a pretty primitive place in the old days before the university began to raise hell with it. The women were given the opportunity of taking some sort of substitute academic requirement and didn't have to go to summer camp.

Lage: What if they wanted to go to summer camp?

Vaux: Well, that issue never arose until about 1952 or '3, when Ann Shideler came along. Ann was a very remarkable person, and she took the viewpoint "Look when I go to get a job,"—she got a B.S. in '54—"When I go to get a job, I'm going to be competing with all these jokers who've been to summer camp, and I will lack that qualification, and I don't want to be so handicapped. I want to go to summer camp."

That was before I became dean, but arrangements were finally made, and Ann went to summer camp and was very successful up there. She got the situation very well in hand the first night. You have to recognize that this would have been 1952, and the whole perspective on this thing was totally different then. The first exercise at summer camp was a campfire the first night the students were there, and each student would
Vaux: be instructed to get up and identify himself and say where he came from, what his aspirations were, and to tell a funny story. As you can imagine, in this kind of a context, why, some of the funny stories were somewhat lurid.

So, Ann arrived at this, and of course it came her turn, and she said she was Ann Shideler, and where she came from, and what her aspirations were, and "I don't know any funny stories that are suitable for telling in mixed company." And from then on, Ann had no problems whatsoever; and she was a brilliant person, physically very strong, and a delightful individual, so there was never any difficulty.

Then the other "lady at summer camp" story that I always enjoyed was Gerry Larson, Geraldine Larson, who came after I became dean. Women were now regularly accepted at summer camp on the basis of the Shideler precedent, but there were still a few things that had to be gone through with. If you can believe it, Gerry Larson had to get the permission of the dean of women to do this, and the dean of women wouldn't give her permission without my blessing, so that if anything went wrong I'd be responsible, not her.

So, one day Birdie Weisbrod came in and said, "Gerry Larson wants to go to summer camp, and she has to get your permission, so I want to bring her in and let you get to know her." So Gerry Larson came in. Slender, svelte, blonde, maybe five foot three or four, or something like that. A beautiful girl, very fresh and youthful looking. So I sat there and gave her various kinds of fatherly advice, how this could all be accomplished, and so on.

Gerry was very polite, and accepted all this in the spirit in which it was given, and didn't react in any way. Then she left with my blessing and permission. After she had gone, Birdie Weisbrod came in; earlier I had detected a kind of a twinkle in her eye, but I couldn't put the thing together. She came in, "So, what'd you think of Gerry, and how did things go?"

I said, "I thought she was an extremely attractive, wonderful young girl. I just hope everything goes all right." Miss Weisbrod said, "You know, she worked her way through the first two years of the preforestry curriculum at the University of Nevada by dealing blackjack at Harrah's Club." [laughter]

Lage: So she handled herself well enough.

Vaux: So she had no problems. Indeed, she was likely responsible for a remarkable manifestation. The forestry curriculum, as we've already discussed, is in itself light on the humanities side. As a result, the forestry undergraduates are not ordinarily eligible for Phi Beta Kappa. They are eligible for Sigma Xi, which is a science honorary, and many
of them are members of Sigma Xi. But it's only rather rarely that a forester makes Phi Beta Kappa, just because they don't have the humanities part of it that Phi Beta Kappa requires.

Gerry Larson was a member of a modest-size class; I think there were thirty-eight or thirty-nine students in her graduating class. There were two very brilliant men in that class, and they'd all three sit in the front row. It was quite apparent that those two men recognized that Gerry Larson had a brilliant mind, and weren't about to be bested by her in the academic sense. I have never seen such cutthroat competition among students as there was among those three.

I mean, not cutthroat in a nasty sense, but they never let anybody visibly get ahead of them. As a result of that, out of that class of thirty-eight or nine, three of them were selected to Phi Beta Kappa. They all happened to have the right humanities background as well as the science background. And Gerry Larson was runner-up for the University Medal, which is given to the undergraduate in the graduating class who has the highest grade-point average.

She would have won it, except one of the very strict faculty members decided she ought to have an A- in a course, instead of an A.

What did she go on to do?

Well, it's very interesting, because of those three people, all three tremendous brains, Gerry's the one that's amounted to something professionally. She's now supervisor of the Tahoe National Forest, the first woman supervisor in the United States Forest Service. And I'm sure she'll go on up and be a regional forester, all kinds of things, before she gets through.

Were there other women in her class [1962]?

She was the only woman in her class, and it was a few more years before the big flush of women began to come. She came just before the environmental movement. Then, with the environmental movement, a lot more women began to come.

Did she go on to Cal graduate school, or did she go elsewhere?

She took a master's degree. And she had the ability to go on for a Ph.D., and I think at one time thought about that, but she was married, and it was more difficult to harmonize that with her personal life. And I think she's a true professional; she wants to practice forestry on the ground and be involved with people, not go off in a research lab and study.

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VI  A DIVERSITY OF ROLES AS DEAN

[Part II, Interview 2: October 24, 1985]

Council of Forestry School Executives and ASCUFRO

Lage: We're going to start out today talking about the Council of Forestry School Executives. When were you a member of that? While you were dean?

Vaux: I was automatically a member of the Council of Forestry School Executives while I was dean, from 1955-1965. Because that's what the Council of Forestry School Executives was: it was simply an informal association of the heads of all the forestry programs. Whether they were schools, or departments, or divisions, or whatever, they were incorporated into that organization.

It was a very informal thing at the time I participated in its activities, in the sense that it was always very reluctant to take any explicit actions. It largely held discussions and information exchange and that sort of thing. It took a limited number of actions, but it was mainly an informal information exchange kind of organization.

Lage: Didn't do any policing of programs, or upgrading?

Vaux: It didn't have to do any policing of programs because one of the reasons for the establishment of the Society of American Foresters, and one of the functions that it has always carried out, was to try to monitor professional forestry education, provide standards for what it considered professional forestry education to be, and to work to encourage increasing standards. So that function was already taken care of by the Society of American Foresters.

The Council of Forestry School Executives was much more a matter of simply interchanging information as to what was going on in forestry education so people could see whether their experiences were like those of other institutions, what their common concerns might be. But if they
had common concerns, it was usually felt that those could better be expressed in terms of policy action through other sorts of existing organizations, like the Association for Land Grant Colleges, or the Society of American Foresters' Education Committees, or things of that sort.

During my tenure on the Council of Forestry School Executives, some things developed that greatly changed the situation. The pivotal action was the introduction into the Congress of a bill that led to what's now known as the McIntire-Stennis Act. It's named for Representative [Clifford] McIntire, who came from Maine, and Senator [John] Stennis, who came from Mississippi.* This act, I think it was adopted in about 1962, in effect adopted the same philosophy for forestry that had been applied to agriculture in the land grant college set-up. In other words, it provided for federal money to match state expenditures for forestry research. The Council of Forestry School Executives--many of whose members were in programs located at land grant college and university institutions, although not all of them were at such institutions--were always unhappy with the very limited support that forestry got from the research funding distributed by the land grant college system.

The people in agriculture, I think it's fair to say, paid a certain amount of lip service to forestry but didn't regard it--and maybe properly so, given what the agricultural problems were--they didn't regard it as a particularly significant thing for funding. Congressman McIntire, and Senator Stennis finally got in mind that there should be new legislation, adapted to the forestry field, that would expand federal support for research.

They used a match money pattern that was already familiar in agriculture, under which the federal government would appropriate money, and then the states would be eligible for that money to the extent that the state put up an equal sum of money for a state forestry institution. In other words, you couldn't get more federal money than the state was already providing.

But it wouldn't have to be a land grant college?

That was another difference. Because of the forestry situation, there were two or three types of problems that had to be dealt with. One was that there were some forestry schools that were not land grant institutions, particularly New York State College of Forestry at Syracuse,

*See also Westveld, R.H. The Background of the McIntire-Stennis Act for Cooperative Forestry Research, University of Missouri Agricultural Experiment Station, Special Report 31, June 1963.
Vaux: which was by far the biggest forestry school. In many ways, if you had to identify the most important forestry school, it might well have been Syracuse just because of its size. The University of Michigan forestry program, which was a very strong one, was not a land grant program. Michigan State University was a land grant program and had a forestry school. So that was kind of a problem.

Then there were Yale and Duke, which were exclusively graduate programs. The way the statute finally read, all of the publicly-supported institutions—that froze out Yale and Duke, because they were privately-endowed institutions—all the public institutions that had undergraduate forestry teaching programs were eligible for McIntire-Stennis money. The law provided that whatever funds would be appropriated would be allocated by a formula, among the states and institutions.

The Council of Forestry School Executives informally was active in lobbying for that legislation. It didn't lobby formally as a council, but individual members did go down to Washington and lobby pretty extensively for passage of that legislation, with the general support of the other members of the Council of Forestry School Executives.

Lage: Did you do that yourself?

Vaux: No, I didn't do that. The principal people who lobbied were Arnold Nutting, Director of the Maine forestry school. Congressman McIntire was a congressman from Maine, and I think Nutting was close to Congressman McIntire.

Lage: Would he have been an instigator of the legislation?

Vaux: I think he well might have been, I just don't know. I'm sure he discussed it often with Congressman McIntire before the legislation was actually drawn. Frank Kaufert, who was the head of the College of Forestry at the University of Minnesota in St. Paul, was very active in that. And there were one or two others, Dean Westveld at the University of Missouri—

Lage: I wonder how Stennis got drawn into this?

Vaux: Because Mississippi is a very important state for the forest land ownership category so that regardless of how the formula for distribution of funds was drawn, Mississippi could look to get a substantial share of those funds. So there had been a lot of discussion of the McIntire-Stennis Bill in the Council of Forestry School Executives, a lot of informal action. It was apparent that there was going to have to be some kind of organization like the committees that the American Association of Land Grant Colleges and state universities has, which ride herd both on the lobbying and the distribution of funds under the land grant college laws, to do the parallel thing for this.
Vaux: There was considerable discussion in the Council of Forestry School Executives as to whether the council should be reorganized and undertake that task, or whether it should be a new organization. It always seemed to me logical to reorganize the Council of Forestry School Executives and have it do it. But there were pressures, the source of which I never fully understood—whether they didn't want to offend Duke and Yale, or what the reason was, I'm not entirely sure.

But at any rate, it was decided to establish a new organization, and a committee was set up, largely out of the Council of Forestry School Executives group, to draft the structure, and so on. It so happened that Frank Kaufert and Dean Westveld were very active in that association. And increasingly, they became the key lobbying people in connection with McIntire-Stennis.

Lage: So this is before it was even fully passed. Or was it set up after the legislation?

Vaux: I would have to go back and do some research to determine whether the new organization was formed before the act was actually signed, or shortly afterward. But they were more or less simultaneous.

Lage: And what was the name of the organization?

Vaux: I got charged with the job of drafting the constitution for this thing. People pretty well made up their minds how it ought to be set up, and my job was simply to put that in appropriate language, and so on. One thing that had never been decided was the name of it. It was the time when acronyms were just beginning to become very popular.

I was charged to suggest an appropriate name, hopefully one that would have an effective acronym as well as being descriptive. I scratched my head for quite a long time while I was writing this constitution, and I never could come up with a name that both covered it and had a reasonable acronym. So, largely with my tongue in my cheek, I decided, "Well, this should be called the Association of State College and University Forestry Research Organizations," which of course is just a ghastly mouthful.

Lage: ASCUFRO.

Vaux: ASCUFRO. And so the acronym for that name was ASCUFRO, and I wrote it into the constitution because I thought it was outlandish, so that it would catch people's attention, and somebody would come up with a better name for it.

So the document came up for adoption, and Frank Kaufert, from Minnesota—who, as I said, was kind of a leader in the thing—said he felt that was a fine acronym, because IUFRO was well established internationally because there is an International Union of Forestry Research
Vaux: Organizations, which is a very old established body. So the term IUFRO was well-known and meaningful to people, and after all, this was an asking organization, so ASCUFRO was quite appropriate. [laughter] And to my astonishment, ASCUFRO was adopted and at least until quite recently, I think, that name was retained.

So it got underway. Of course, immediately the first thing that happened was an internal controversy within ASCUFRO as to the formula for the disposition of funds.

Lage: That's to be expected.

Vaux: Of course. All the small forest states argued that, "Obviously you've got to split it equally between the states regardless of the importance of forestry." All the states such as the western ones, with heavy volumes of standing timber and very large forest products industries argued that you ought to do it on the basis of the level of cut from the state. All the cut-over states, like the lake states, and in the south, argued that you ought to do it on the basis of the area of forest land, whether or not there was any production. So obviously what came out was a compromise among those various interests, and the formula reflects, on a weighted basis, all three of them. Like most formula answers, it isn't a particularly rational one, but it works politically, and that's about all.

Lage: So this group actually would determine the allocation of funds? Or was that written into the legislation?

Vaux: The allocation of funds is provided for in the legislation, but the specific allocation formula was left to USDA [U.S. Department of Agriculture] as the administering agency. ASCUFRO worked closely with the Office of State Agricultural Experiment Stations in USDA as that Office developed rules for administration of the act.

One of the features of the legislation was that there were some states that had two institutions that qualified for programs, and Michigan even had three institutions that were potentially qualified, so it was needed in the legislation to specify how that would be done. As is conventional in such matters, Congress simply finessed that to the states and provided that there should be a governor's representative in each state who would make the determination of how the funds would be distributed within each state. That, in California, was handled by the governor originally designating the University of California's vice-president for agricultural sciences as the governor's representative.

From the theoretical standpoint, this was logical enough because the University of California, at that time and still, is the only member of the higher education system that has authorization from the legislature.
Vaux: to do state-funded research. So there was logic to it, although politically it was not obviously a very solid structure because of the competition between state colleges and the university.

At that time, Dr. Harry Wellman, who later became executive vice-president of the university and acting president at one time, was the university dean of agriculture; he was the first governor's representative. He said, "Because it's a match money program, let's figure out the amount of state money that's spent for research by each of the institutions." At that time there were only two--Humboldt State and Berkeley--that were eligible. "We'll allocate the money on the basis of that."

That permitted Humboldt State, then, to take credit for research money that its people got on contract. In other words, like most state colleges, the Humboldt State forestry faculty were on nine-months appointment, and a number of them got contracts with the State Department of Fish and Game or some other natural resources agency to support them in research during the three summer months, or in other ways to supplement their stipend as teachers.

Wellman said, "Let's count that," so the allocation was made on that basis. Initially, that calculation led to a roughly 90 percent, 10 percent division. That lasted for a long time. Subsequent governors shifted the designation of the governor's representative from the university dean of agriculture to the director of the Department of Forestry, in Sacramento.

It just so happened that at that time and subsequently the director of the Department of Forestry continued to be a graduate of the University of California, and there was no visible change in the allocation. One of the first consequences of the accession of the most recent director of the Department of Forestry, who is a former Humboldt State faculty member, has been to raise this issue and to get a re-allocation of that base.

Lage: How much difference did this make? Was this a noticeable amount of money that helped forestry research?

Vaux: Well, yes. I can't tell you about the subsequent budgetary developments. Initially based on that formula that I spoke of, it started out with the minimum amount that had to go to each and every state that was qualified by virtue of having a forestry program. I think all but two states managed to make some showing that they were qualified. And it was argued that you had to give each state enough money to fund a minimum core of research; you couldn't split it up infinitesimally small. And $50,000 was taken as the arbitrary minimum allocation. That initially took up well over half the appropriations that were made.
Vaux: As time went on, the appropriations got bigger, and then the base amount of $50,000 was less and less important. But I think originally we got about $100,000 of federal money. This was in 1962. It wasn't a vast increase, but it was a nice increase in our funding. And I think, subsequently, the funding has gotten very much bigger, so that nowadays I think the McIntire-Stennis fund is a substantial fraction, perhaps as much as 20, 25 percent, of the forestry research funding of this institution.

Lage: And it's administered through the experiment station?

Vaux: Through the Agricultural Experiment Station, yes.

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**SAF Study of Forestry Education, 1957-1963**

Lage: Let's turn, then, to the study of forestry education conducted by the Society of American Foresters.

Vaux: A committee, called the Steering Committee for the Study of Forestry Education, was organized by the Society of American Foresters in 1957. The Society of American Foresters has had an interest in professional education virtually from its inception. In 1909, the Society organized a Committee on Standardization of Instruction in Forestry. That committee worked for a couple of years and published a report about 1912 on a standardized curriculum in forestry education that they hoped would guide the various schools of forestry that were then emerging.

Right at the end of the 1920s, along '29, '30, '31, a major project was developed—and I don't know whether the Society of American Foresters had anything to do with it, or whether it was funded by some foundation and simply carried out by the authors under the auspices of that foundation—but it was a major study of forestry education.

It was conducted by Henry Solon Graves, who was the dean of the Yale forestry school, and Professor Cedric H. Guise, who was a professor at Cornell, which had a forestry school at that time. The Graves and Guise Study was a very thorough evaluation of professional forestry education and, indeed, became sort of the bible of this sort of thing for a good many years.

The Committee on Accreditation of the Society of American Foresters was established in 1933, I think pretty much as a result of the Graves and Guise Study. That committee is recognized by various education associations as the official accrediting body for forestry education. It functions to review curricula, teaching talent, physical
Vaux: resources, and so on of various forestry educational institutions, against standards that the society prepares that indicate what it thinks the minimum level of satisfactory professional education ought to be.

The study that I was involved in began in 1957, when the Old Dominion Foundation—which I think was some Mellon money—gave a grant to the Society of American Foresters, essentially to do a re-do of the Graves and Guise Study of twenty-five years earlier. A lot had happened in forestry education in the interim: the field had changed greatly, and the number of forestry schools had proliferated greatly, and there were a whole variety of issues that had come up to warrant attention. The steering committee was set up by the Society of American Foresters to simply oversee and guide the study. Its primary responsibility, really, was the selection of people to do the study.

The steering committee was quite a powerhouse committee; it had some very capable people on it. From the Society of American Foresters itself, Henry Clepper was the secretary of the committee, and Paul [M.] Dunn, who was at that time president of the society, was the chairman of the committee. So the society obviously was putting a lot of emphasis on it.

Excuse me, I said he was the chairman of the committee; he was not. I guess I was the chairman. Then Richard McArdle—who at that time was an assistant chief of the Forest Service and later became chief of the Forest Service and probably the outstanding professional figure of his generation—was a member representing, in effect, the Forest Service side of it. He had been dean of the forestry school at the University of Idaho for a year or so, so he had at least some perspective on the inside of education.

Another member, Bernard Orell, was a vice-president of the Weyerhaeuser corporation. Bernie Orell had been a forestry teacher at the University of Washington early in his career, so he had some perspective on education. Then Hardy Shirley, who was the dean at Syracuse, and I were sort of the two people drawn from the forestry school sector directly.

I think the committee was unanimous initially—well, it may not have been unanimous, but I think there was a majority of the committee initially who wanted Samuel T. Dana to head the study. I think by that time he had retired from his post as dean of the School of Natural Resources at the University of Michigan, but he was not available because of other commitments. So the people who were eventually commissioned by the committee to carry out the study were Harold Wilm, who was an associate dean at the New York State College of Forestry at Syracuse, and a man named Evert [W.] Johnson, who was an assistant professor of forestry at Auburn University.
Vaux: They were commissioned to do the actual study. The committee did some review of their work plans and that sort of thing and gave some advice; but, obviously, these were two mature educators and professional people and did not need too much counsel. So they started to carry out the study largely by their lights.

Then, in 1959, when the study was about two-thirds finished, as they had originally planned it, Harold Wilm accepted an appointment in Governor Rockefeller's cabinet, in charge of the natural resource area of the New York State government. He withdrew from the project, which left us in very serious condition because, at least by my lights, up to that time the project had not gone particularly well. A good deal of the money had been spent on a questionnaire, this sort of thing, which didn't seem to me particularly revealing. I think some of the other committee members felt concern. Fortunately, from our standpoint, by that time Sam Dana had become available. Good old Sam, who was always a marvelous person, agreed to try to salvage the operation.

So he carried on the study from then on and wrote the book, which is called Forestry Education in America Today and Tomorrow [Society of American Foresters, Washington, D.C., 1963]. I think anything Dana did was valuable; there's no way to deny that. So I think, from that standpoint, the study came out fairly well. The book was published in 1963.

The committee did the formal things, like reviewing the manuscript and looking at the recommendations. The committee had deliberately asked Dana and Johnson to be forthright in making their own recommendations, and so the committee wasn't about to second-guess those in any sense of the word. There might have been differences of opinion on a few things here and there, but I don't think there was any major quarrel with what their findings had been. In some ways, the central recommendations of the study were the same things that the Society of American Foresters and the educational wing of the profession had been recommending ever since 1912. I would say the central recommendation was that the professional forestry education program ought to be a five-year program for the master's degree.

Lage: So that wasn't a new insight.

Vaux: It wasn't a new thought; it was a reiteration of something that had been stated repeatedly over the decades. There were some obviously substantial observations and recommendations as to what it would take to achieve that, in terms of what employers might have to do, what the society would have to do, and this sort of thing. So it was quite a list of recommendations that were regarded as steps to, or implementation of, work toward a five-year curriculum.
Vaux: I suppose the other aspect of the book that was important spoke to the charge from the Old Dominion Foundation that the study should address education in forestry and related fields of natural resource management. So a good deal of the focus of the book was on what the relationship of range management, wildlife management, wood science and technology, watershed management, this kind of thing, was to forestry education.

The book took an analytical approach to that and said, "Where watershed management involves forested lands, then it's part of forestry, and where it doesn't involve forested lands, then it's separate from forestry." Which is a way of handling it in analysis and fairly realistic, but I don't think it came out with any clear-cut recommendations that were very useful in implementing a concept of multiple use or something else of this kind.

Lage: In education.

Vaux: In education, yes.

Lage: Did it have an impact?

Vaux: That's what I'm trying to build the background for. Then following the publication of the book, as I recall it, the Society of American Foresters established another committee, called the Committee for the Advancement of Forestry Education. That was a committee that was supposed to do something about the book. Unfortunately, I chaired that committee, too. I think it accomplished, it's fair to say, absolutely nothing.

We did some work, and we tried to get a grant. It was not a strong committee, by any means. Dana and Johnson's study had focused on the academic institutions, and they wanted to do a study on the job aspect of it: what foresters were actually doing, and what employers thought they needed, whether they were public or private employers--this kind of thing, which Johnson had to a degree attempted in that book but really didn't get any significant results.

So this committee thought that there ought to be a study of that kind made. I spent some time, in cooperation with the then-executive head of the Society of American Foresters, trying to find some money for it. We never did find any money. I don't think much more came out of that set of recommendations in that book than had come out of either of the earlier ones.

I think they probably had some influence on the accreditation committee. I think they probably had some influence on the thinking of the members of the Council of Forestry School Executives and that sort of thing, but I don't think it's possible to point to any substantive accomplishment that came out of it. And as I look back on it, I would
Vaux: identify some fairly clear sets of influences that made it almost a foregone conclusion that nothing would happen. I think the educational institutions are responsive to the economic and cultural environment in which they're placed and respond to that, not to dicta from people who study education in the abstract sense of the word. Dana and Johnson, in their book, recognized that this five-year program thing wouldn't come about unless the Forest Service and the lumber industry—which at that time were the principal employers of foresters—recognized this in their employment practices, particularly at the entering level. They didn't suggest that it should make any difference to advancement, and that sort of thing, but that at the entering level, they suggested that employers should recognize the differential value of differences in education.

Lage: Would that imply a master's degree, then, such as the Cal master of forestry degree?

Vaux: Yes, that was essentially the gist of the argument that Dana presented, and I suppose you could say in some ways it had an influence on us here in Berkeley, when we set up the master of forestry degree as the fifth year of professional education for the forester.

A Proliferation of Forestry Schools, a Narrower Timber-Oriented Outlook

Lage: I noticed in reading about this study that there are a lot of unaccredited forestry schools.

Vaux: Yes.

Lage: What's the situation with those? It seems as if almost half the schools were unaccredited at the time.

Vaux: And that was one of the reasons the Dana/Johnson Report was written, because there was a perception that "there were too many schools." I think it was hoped that this might have some influence on educational administrators and sort of slow down the creation of new programs.

Lage: What kind of schools would they be, or what kind of programs would they be offering?

Vaux: Humboldt State would be a good example because I think at the time the report was written that was not an accredited school, although it now is. A lot of schools were finding that there was demand for students that wasn't being fulfilled, and of course the structure of forestry education was such that by far the bulk of the forestry schools at that time were at land grant institutions. If you were in a state that had
Vaux: a land grant institution but didn't have a forestry program in that institution, then you had to go out of state if you wanted to study forestry, and pay out-of-state tuition fees, and all this sort of thing.

As enrollments ballooned following World War II, when there was a lot of interest in forestry among the GIs who came back to school at that time, it set up a kind of a natural pressure for each state that didn't have a forestry program to start one. Because they could argue, "Look, our students are having to go across state lines and pay out-of-state tuition fees, and we ought to be offering this service to our students."

A lot of new programs started on that basis. Given the ordinary course of institutional evolution, it's rare that anybody develops enough muscle to start out a program that qualifies for accreditation immediately. The typical pattern would be that they run along with only one or two people for several years, and then a budget splurge would come, and they could build up to five or six. Then eventually they would build up to a status where they could become accredited. That's sort of the typical pattern of such institutions.

I think that's where these studies had some effect, because they had some effect on the accreditation committee. I think the accreditation committee did quite a lot to provide leverage for those programs within their own institutions because the heads of the forestry program, if it wasn't accredited, could go to their presidents and say, "Look, this is a disgrace; we have a forestry school, but it's not even accredited by the Society of American Foresters." This was kind of the way that the thing worked.

It worked a little differently in the case of Humboldt State, because there was a forestry program in the University of California but no forestry program in the state university system. The University of California's admission requirements were significantly higher than the state college or the state university system is. Roughly--this is a very crude simplification--but roughly the university required a B average from high school, and the state college system required a C average from high school. There are a big number of students in that bracket.

So a great many California students who wanted to take forestry couldn't get into the university because of the admission standards, but they could get into land grant institutions in Oregon and Idaho and Utah, which had forestry programs. So there was this great exodus. I think at times in the 1950s and late forties and in the thirties, as much as fifty percent of the undergraduate enrollment at institutions like Oregon State and Idaho and Utah were students from California.
Vaux: That was a natural vacuum for Humboldt State to try to fill, so they started a program which was initially not accredited but with the objective of working toward accreditation, which they eventually achieved.

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Vaux: I don't know what the status is now, but for a period of years, the Humboldt State program had the second largest enrollment of any forestry school in the country. It was exceeded only by the New York State College of Forestry, which is a different kind of an organization entirely.

Lage: I didn't realize it was that big a program.

Vaux: Oh, yes, it was a very big program.

Lage: Was there a lot of competition or any ill feeling between the university and Humboldt?

Vaux: There's always been a lot of tension, at some level. So long as I was dean, I tried to be cooperative and lend whatever encouragement I could to them, because I didn't see that there was really any need for competition. The great strength of the program at Berkeley is the graduate program, as we said before. The undergraduate program is important, but the University of California cannot necessarily claim preeminence for its program at the undergraduate level, for a variety of reasons—not academic reasons, perhaps, but for practical reasons because of location and so on.

So it always seemed to me that there was a real niche for Humboldt State in doing a good job on the undergraduate program for those kinds of students that were eligible to go there and weren't eligible to go to the university. I never saw any basis of conflict. I personally always would have rather had the university's forestry program be a five-year program, with that much narrower base. But obviously the economics simply wasn't there to permit that to happen.

So all the talk about a five-year program, I think, foundered on the fact that the size of the field was sufficiently small so that there just wasn't a market for a five-year program, in terms of availability of jobs, certainly not for everybody who was taking four-year undergraduate programs. Probably the number of five-year fully qualified master's degree people that the market would have accepted at the appropriate salary differential was too small to support the number of programs that there were scattered over the country. Now, if you'd had some way of disciplining it down so that all you had was maybe ten or twelve graduate forestry schools, you might have been able to install a system of that sort. But, given the presence of thirty or forty or fifty undergraduate programs, with a lot of stake involved in those programs, there was no way you could restrict the educational process to such a narrow ground.
Vaux: I thought the proliferation of schools was a mistake at the time; as I look back on it I think it was even more of a mistake. [long pause] When I went to forestry school myself there was much more of a feeling of the breadth of forestry as a field that covered all the things that Dana and Johnson called related fields--that was thought of as part of forestry in the minds of the people who taught me here at Berkeley. People like Mulford and Kittredge and Sampson, and so on.

Then after World War II, when there came the great boom in jobs for foresters in the forest products industry, in my mind that gave a very much narrower timber orientation to what people considered forestry. The line between timber forestry and watershed management and wildlife management and so on, it seemed to me, got more and more sharply drawn.

I think everybody would have been better off if, at that time, the forestry schools had accepted that, but made efforts to bring the other fields along with them so they were still identified as part of forestry. Then the base might have been big enough.

Lage: So you kind of see it as a broader field that narrowed and then maybe broadened out again.

Vaux: Tried to broaden out, but not very successfully, I think. I shouldn't say not very successfully--not as successfully as if that had been kept as a major objective from the beginning.

Lage: It's interesting to me because in talking to environmentalists, they talk about the change in the practicing foresters, probably about that same time, that they seemed more narrow. I suppose it's not just education, it's the other pressures on them.

Vaux: Yes. The pressures of the job--

Lage: The same pressures that were on the schools of forestry were on foresters in the field also.

Vaux: Yes.

Lage: But education has something to do with their outlook. Do you think we've finished up on that subject? Anything else you want to mention?

Vaux: No, I think that's enough.
The Forest Products Laboratory: Developing Support within the University#

Vaux: Why don't we talk about the Forest Products Lab and the wood science curriculum?

Lage: You mentioned that the wood science curriculum was established last time, and the Ph.D. was awarded.

Vaux: Yes.

Lage: And we mentioned the existence of the Forest Products Laboratory, but we didn't get into its purpose.

Vaux: Yes. The history of the Forest Products Lab has been pretty well documented. Director Dickinson wrote a history when it was twenty-five years old, and that's published. A lot of work had gone into the development of the Forest Products Lab before I became dean. The building had been essentially completed under Professor Cockrell's supervision: he gave a lot of dedication to the details of getting that building put into shape, for which he's never received very much credit. But he obviously bore a lot of the nuts and bolts responsibility for seeing to it that the Forest Products Lab got a good building.

As I said last time, when I came aboard, they were ready to appoint the director. Fred Dickinson, who had been at Michigan and Yale previously, was appointed, and he took office as director just at the same time I did. Organizationally, as dean of the forestry school, I was also an associate director of the experiment station. As dean of the forestry school, I was also chairman of the Department of Forestry.

For budgetary purposes, the Forest Products Lab was a separate budget unit from the Department of Forestry. The Forest Products Lab was a research budget unit, but not a teaching budget unit. So Director Dickinson of the Forest Products Lab was under my budgetary jurisdiction so far as the channel for funding from the university was concerned.

On the teaching side, most of the Forest Products Lab appointees eventually also had not only their basic research appointments in the Forest Products Lab, but an additional teaching appointment in the Department of Forestry. So the organizational relationship there is a little bit strange, in the sense that on research matters Professor Dickinson reported to me as Director of the Forest Products Lab, in my capacity as dean. On teaching matters, it was a much less formal relationship on paper, in the sense that Dickinson was another member of the department reporting to me as department chairman.

Which really wasn't particularly significant, because my working relationships with Fred Dickinson were always of the very best. We never had any difficulties that I was aware of in our relationships, whether
Vaux: it was in teaching or research. I always thought Fred Dickinson did a remarkable job of organizing the lab, getting it underway, recruiting good people, establishing good relations with the forest products industry—which was a very important function for the lab to perform.

He also perceived the importance of developing support for the lab in the campus community. It was a little bit isolated as a research lab, isolated in the organizational sense—it wasn't a department of instruction. So, of course, that made it kind of second class in the campus-wide perspective. Not to be a department is pretty terrible. [ironically]

Lage: Did he appoint people that were not teachers, just researchers?

Vaux: Yes, yes, much more so than in the department the major criterion was research capability. So there were some people appointed who never had very much by way of teaching responsibility. But Fred Dickinson, as a matter of personal philosophy that I heartily endorsed and supported, kept his eye out to recruit people who would be interested in teaching, because he saw the importance of building a teaching program as a way to get acceptance for the lab in the broad campus community.

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Vaux: You see, that isn't just breadth of vision, it's responsive to some very visible constraints in the university system. The Forest Products Lab appointees, as members of the experiment station, were fully academic appointees, under the control of the Academic Senate, only they had research titles instead of professorial titles. The by-laws of the Academic Senate recognized those Agricultural Experiment Station titles as the equivalent of professorial titles, which means that they have to meet the same tests as to competence for research that a professor would meet.

If you're an assistant wood scientist in the Agricultural Experiment Station, you would have to meet the same research criterion as an assistant professor of wood science in the department. So those people had to stand the test of those same criteria, which is all well and good; but then the review committees come mainly from departments of instruction and research, who are automatically looking askance at totally experiment station people, "Well, they really aren't full members of the faculty," in some sense.

Dickinson perceived that very clearly and was very alert to integrate his people as much as possible with the general university structure. In most cases, they had teaching appointments in the department, and they would have maybe ten percent teaching time in the department, and ninety percent in the Forest Products Laboratory, compared to the conventional fifty percent teaching, fifty percent research, which was the way most of the department people were.
Vaux: But it was Fred Dickinson's philosophy and policy, that he worked very hard at, to try to achieve this integration. Not all the people had their teaching appointments in forestry. One or two of them had them in chemistry, one or two in aspects of engineering, and that sort of thing. So we got some penetration of the colossus [laughter] in terms of individual people. And this was terribly important, because when you got that penetration, then there would be people out there who were not Forest Products Lab people, but who knew what it was all about, who could be put on appointment and promotion committees and give a sense of realism to what was going on.

Lage: So, was this a problem mainly in terms of appointment and promotion, or were there other areas where the Academic Senate might intervene or affect the personnel?

Vaux: The most important place was in relation to appointments and promotions. Now, it also was of importance in curriculum and getting the graduate program in wood science and technology established. But once the problem had been solved at the appointment and promotion level, then that laid the groundwork that was necessary for a solution of curriculum problem, too.

FPL and the Forest Products Industry

Lage: You said it was very important to have good relations with the forest products industry.

Vaux: Yes.

Lage: Now, why was that?

Vaux: Well, the forest products industry perceived that it had taken the initiative in getting the money from the legislature to build the lab—which was, to a substantial degree, true—and therefore had certain expectations from it. Furthermore, although the lab could rely on ongoing appropriations from the legislature, which now were part of the university budget, it also received supplementary funds by undertaking some industry-sponsored research. So it was important to have good relationships with the industry to get support both for the university budget and for sponsored research.

One of the first things that Fred Dickinson did was to organize a Technical Advisory Council, as he called it, for the Forest Products Laboratory. Originally, that started out as a very high-level council in the sense that it was appointed by the president of the university, who at that time was still Robert Gordon Sproul. Dickinson undertook
Vaux: The negotiations with President Sproul, who had always had some interest in forestry, and got him to support having this council, and he made the original appointments.

Shortly after that, when President Sproul retired, the whole university-wide system was reorganized. When Kerr came in as president, the campus role of the president of the university became much less than it had been under Sproul's regime because of course Sproul had been president at Berkeley, and you didn't make that separation easily and quickly. So as soon as Sproul went out as president, then it became not the president's Technical Advisory Council, but the chancellor's. And that's the pattern that's been followed since, I think.

Lage: When you say the forest products industry, is it a tightly-organized industry, or were there particular leaders of particular companies on the council?

Vaux: The forest products industry is reasonably well-organized, and it has been for a very long time in California. And you can identify particular organizations that represent this. The oldest and most stable and biggest one is the California Forest Protective Association. That kind of sounds like a bunch of Chicago gangsters, but it's not; it's an association of the large forest landowners in California. Not exclusively, but to a considerable degree, those large forest landowners also operated manufacturing enterprises of one kind or another.

Then there were two trade associations that have California components: the California Redwood Association, and the Western Pine Association, which are explicitly organizations of wood products manufacturers.

Lage: Rather than--

Vaux: Rather than timber growers, yes. Some individual companies might be members of two or more of these organizations. The industry is sufficiently well-structured with its own organizations for other purposes, that by picking a couple of representatives from one organization, a couple of representatives from another, and so on, you would get a council that was fairly representative of the industry as a whole.

Another very important one from the Forest Products Lab standpoint was the Furniture Manufacturers' Association, which was very important in the Los Angeles area, and they were represented on that council.

Lage: Would you say that that Technical Advisory Council played a strong role?

Vaux: Oh, I think it's been quite an invaluable role.
Lage: In public relations type things? Or actually in the operation of the lab, in what research was accomplished?

Vaux: I don't think you can separate it into pigeonholes because if an organization like this works well in the sense of creating cohesion and direction, then it's, to a degree, effective in all those areas. I would be at a loss to pick out particular major accomplishments of the council, but I just have the impression, watching it operate--particularly during its initial decade, but from further removed subsequently--that it has remained a very stable, reinforcing institution for the Forest Products Lab program.

I'm sure that meant that at times there would be responses to the council's concerns about research that ought to be done. I don't think this means at all that the council was a tool of the industry for dictating the research program of the lab. I think that was one of the great things about it, that Dickinson managed to convey to those people that its role was broader and more fundamental than just telling them what research to do.

Lage: So he must have had quite a role in setting up the expectations--molding this--

Vaux: Sure, sure.

Lage: That takes a lot of finesse.

Vaux: Yes, exactly. And he's a person who has a lot of finesse in that area. Naturally, there were certain key individuals, like Charles Berolzheimer [of California Cedar Products Co., Stockton] and others, who became enthusiastic in their support of the lab. Fred knew how and was careful to maintain very cordial relationships. A lot of those cordial relationships lopped over into the personal field, which is marvelous if it gets so that it's all part of a family. I think Fred accomplished that in a very real sense.

Lage: This close relationship with industry that places like the Forest Products Lab have, was that under suspicion by the totally academic part of the university? It seems unique to professional schools.

Vaux: No, I don't think it was under particular suspicion, particularly when sponsored by the president or the chancellor. That makes a lot of difference. And this pattern isn't unique, particularly in the field of agriculture. For example, if you go to Davis, almost every department in the old College of Agriculture at Davis had its own industry research advisory committee, for food crops, and for every department practically. You go down the list of departments, and you'd find they had an industry advisory committee that advised them on their research.
Vaux: And I think most professional schools have an industry advisory committee, or a number of them, perhaps. I think you can find those in engineering, and business administration, and so on. So it's not a unique pattern. Fred Dickinson, perhaps, worked a little harder at that and gave it even a more important role than many departments did. But I don't think that would have been a cause for suspicion, particularly.

Lage: We were talking earlier about the place of the professional school in the university. The relationship with industry is something unique to professional schools, as opposed to the purely academic departments.

Vaux: I would think so, yes. I don't see where an academic department would have any need for such a thing, because their constituency isn't crystallized the way a constituency for a professional school is crystallized.

Lage: Did the advisory council also raise funds for the lab?

Vaux: I think there were one or two occasions where there were special needs, where Fred used the advisory council as a way of approaching industry to try to get money, yes.

Lage: So industry was a substantial contributor to the lab? Would that be fair to say?

Vaux: That I don't think necessarily follows. Except for a few exceptional problems, the industry contribution was not large in total budgetary terms. The industry took the position always, really, that it had done the work, and was doing the work, to get state funding for the lab, and they were providing that state funding through their taxes, so indirectly they were supporting the lab.

Lage: So most of it did come from the state, then.

Vaux: Yes, and the federal grant.

**Internal Differences at FPL**

Vaux: I should mention, because it probably won't be mentioned anywhere else, some internal problems that Fred had. The Forest Products Lab had been organized as a budget entity as early as about 1952. The first full-time staff member was appointed at that time, a man named Arthur Anderson, who was a wood chemist, and he was appointed at a senior-level, full professor-level equivalent.
Vaux: He had a laboratory in Mulford Hall before the Forest Products Laboratory was available. I think Art Anderson was disappointed that he was not appointed as the director of the Forest Products Lab. He came first, and I think he had the expectation that automatically when a director was appointed, he would probably move into that slot. But he was not moved into that slot, and while Art always did a good job, I think, of accepting this in a philosophical way, I think that impaired his relationships with Fred Dickinson to a considerable degree over the years. He was a very, very good wood chemist, but he would have made a miserable director of the Forest Products Lab, and I think Art had difficulty in seeing that there was a difference.

A couple of years after Dickinson took over, partly with Art's encouragement, he recommended appointment of a man named Dr. Joseph Marian to another senior slot in the lab. I think his field was wood adhesives. I never did get Joe's nationality quite figured out, whether he was Austrian birth and Swedish citizenship, I think that's what it was. A very engaging man, a very brilliant man. And so he came aboard. But he, again, was a pure researcher. He had very little interest in the teaching side of things and brought a very European perspective to the whole operation, particularly on the side of organization. He viewed a university department as a place where you had a senior professor, and he ran the show, and everybody else was a serf, waiting for the senior professor to die, or go on and do something else.

I think primarily due to Joe Marian's influence, he and Art Anderson tried to force this organizational theory on the Forest Products Lab. I was only dimly aware of this. Dickinson would tell me from time to time that he was having some organizational problems and gave me some feel for what they were, but I didn't get actively involved until Anderson and Marian came to see me formally, as the next person up in the chain of command, to complain about Dickinson's manifest incapacities as director of the Forest Products Laboratory, because he was not giving them all the money, and he was hiring young assistant professors who were given substantial research funding and moreover allowed to have a more or less equal voice in what the research program ought to be and so on.

Naturally, they didn't get any support from me. They asserted that they would then go to higher authority in the chancellor's office. Whether they did so or not, I don't know, at least I never heard anything from the chancellor's office about it. So I assume that if they did, they got a cold shoulder there.

It was simply a matter where Marian had a very different idea of organization, where he was going to be the central figure. He thought he ought to be the director of the lab. The approach was totally inconsistent with the way the University of California organized things. But that was a trying incident for me, and I'm sure extremely trying for Fred Dickinson because he had to live with those two men. They were both tenure professors at that time.
Lage: That was a long, ongoing thing, I would guess.

Vaux: And he had to live with them after this was over. So that was, I know, one of the major problems that he had to contend with, but I don't think it had any effect, ultimately, on the way the Forest Products Lab ran. Just two personalities that either didn't understand, or couldn't accept, the organizing philosophy. And, I think, in that area, to the extent that the Technical Advisory Council was aware of the situation, they were supportive to Fred.

Lage: So they would have been privy to some of this?

Vaux: I imagine one party or the other to the controversy would almost certainly have told some of the technical council people what their concerns were.

**Founding and Directing the Wildland Research Center**

Lage: Shall we look at the Wildland Research Center?

Vaux: The Wildland Research Center is a completely different sort of thing. The background for that I guess goes back again to the things that happened even before I became dean, or shortly thereafter. There were two preliminary steps that led to the Wildland Research Center. One was the fact that DeWitt Nelson, when he was director of the Department of Natural Resources, as it was then called, had been instrumental in having the legislature earmark a certain amount of tidelands oil money—which at that time was substantial but much less in volume than it subsequently became--to earmark that for natural resources research. That money was administered by the state departments in the various natural resource fields so there was some in actually what was then the Department of Conservation, which included the Division of Forestry. "Swede"Nelson, with the help of various legislators, got this money earmarked, and the State Division of Forestry would then contract with various research agencies to carry out the research.

A number of these contracts were with the School of Forestry and the Forest Products Lab. So we had a very good relationship, at that time, with the State Department of Forestry, in terms of money that they were putting up to support research conducted by faculty members on the campus. Now, the difference between this and the regular Agricultural Experiment Station, with the McIntire-Stennis money, for example, was that for federal money, or state-budgeted money that came through the university budget, the research to be done would be largely what the faculty member decided he wanted to do and was important to do. He would prepare an appropriate project, but given that it was technically sound from the research standpoint, why, there was no further control on it.
Vaux: This tideland money the state used to encourage people in the department to do kinds of research that the state people thought was responsive to the problems that they were encountering, where they had research needs. That program was quite a good one in the 1950s, and there were six or eight contracts with the state that we had during the time that I was dean for this kind of thing. Professor Stone did some very good work on root regeneration or various species of tree seedlings, which was quite instrumental in improving the survival of planted trees. Professor Muelder did some very interesting research on the silviculture both of redwood and of ponderosa pine.

Some work in the Department of Entomology was supported, and that's an important thing to recognize, that not all of the forestry research was done in the Department of Forestry. There was other forestry research done in the Department of Entomology, the Department of Plant Pathology, the Department of Soils, and so on. This becomes important when we start to talk about the College of Natural Resources and some subsequent developments.

So there was that cluster of research that formed a bond between the Department of Forestry in Sacramento and the School of Forestry in Berkeley. The other thing that happened was that the director of the Forest Service Experiment Station in Berkeley in the early 1950s—I think it was George Jemison at the time—went to the then-chairman of the State Board of Forestry, William S. Rosecrans—who was I suppose the strongest chairman of the State Board of Forestry that we've had in modern times—and asked him to support increased federal funding for forestry research. This was even before the McIntire-Stennis thing came along.

Rosecrans said, "Probably you do need a lot more money for research, but I don't know why, and I don't see anything that tells me why. Why don't you make an assessment of the research needs for forestry in California, and we'll see what that looks like. If that assessment looks convincing, then I'll support you politically." So, under their aegis, the California Forest and Range Experiment Station, as it was then called, the School of Forestry and the State Division of Forestry jointly developed a California Wildland Research Plan.

I think it was probably the first sort of major effort at coordinated research planning that was done in forestry, anywhere. It was quite a pioneer effort for its time.

Lage: This is broader than forestry, when you're saying wildland.

Vaux: That's right, although I don't make that distinction as sharply as many people do. I consider forestry as concerned with the whole wildland spectrum of things. I think the forestry school's scope, certainly for the last twenty-five years, has been that broad. And indeed, I think it always was that broad. There have been some fluctuations in orientation, in response to job markets and other things of that sort.
Lage: Then this choice of the word "wildlands" wasn't a significant thing? There was no expansion of scope at that time?

Vaux: I think it simply reflected and made explicit a scope within the minds of certainly all the people who were involved in this effort. People like Jemison and Rosecrans, the people at the school, had this breadth in mind. Although that's an interesting question, because it's still an issue that goes on.

This issue of whether forestry is a narrow thing focused on timber growing and utilization for commercial purposes, with coincidental attention to related resources, or whether forestry is a broader concept of multiple-use management of land, primarily characterized by a forest—that issue, I think, will always be there, partly because of the political stresses that push one way and then the other way, with the tendency of the forest products industry to stress the narrower scope and the tendency of some other groups to stress the broader scope. And I suppose that tension will always exist. But some individuals in the forestry school have always been spokesmen for one view or the other. I think there's always been a spokesman for the narrow view, but I don't think that's ever been dominant.

So that Wildland Research Plan was prepared and published in 1956 or '57, and I did a lot of work on that in the early days of my deanship trying to get that plan into shape. All of that early experience, both with the state contracts, and with the Wildland Research Plan, and that sort of thing, gave me a sense that the Agricultural Experiment Station, which was the administrative institution under which all our forestry research was done, was not widely perceived as a logical agency to turn to if you wanted forestry research done.

The experiment station was perceived as concerned with cotton, and grapes, and all kinds of things of that sort, but not with forestry. So I thought there was a need for some kind of lightning rod to call attention to the role of the Agricultural Experiment Station in this particular kind of research. And, hopefully, once such a lightning rod was erected, then there might be some lightning strikes from sources of money that previously hadn't been accessible. So that was the kind of thing we worked on.

I discussed this with Vice-President Wellman, who was then in charge of agricultural sciences, and director Paul Sharp, of the experiment station. Paul Sharp, because it was his immediate responsibility as director of the experiment station, was very cooperative and made a number of useful pragmatic suggestions. They thought that it would be useful to organize this Wildland Research Center kind of in the model of the Water Resources Center.
Vaux: Now, it didn't follow the Water Resources Center model closely for a number of reasons, of which the main one was that the Water Resources Center already had substantial funding; there was some money to disperse. The Wildland Center didn't have any money, and its emphasis was the other way around—

Lage: Collecting?

Vaux: It was collecting. So that led to some differences. But the central organizing device, like the Water Resources Center, was a university-wide committee. That means a committee appointed from departments not necessarily throughout the university, but from all those departments, regardless of campus, which were perceived as having some interest or competence in the area of wildland research.

So there were representatives on the committee from most of the campuses. As I mentioned, as dean of the School of Forestry, I was also an associate director of the experiment station with particular responsibility for forestry research. This was a forestry-related enterprise, so I served automatically as chairman of the Wildland Research Center Coordinating Committee.

Lage: It sounds as if you had a tremendous number of hats that you wore as dean.

Vaux: Oh, I did.

Lage: No wonder you had that heart attack in the middle of all this.

Vaux: [laughs] I'm not sure that that was so much a function of all those hats, though I think the number of hats reflects the organizational complexity of the University of California, particularly in the College of Agriculture, or the Division of Agricultural Sciences.

Lage: But they were not paper hats; I mean, you had different responsibilities in each case, it sounds like.

Vaux: That's right, but they were not conflicting. They put pressure on me from the standpoint of time. I never felt I had the time to do the kind of job I would have liked to have done on many of these tasks. That wasn't because of the hats, it was because of the fact that there were interrelated functions, and as is customary in an academic organization, you deliberately have a small administrative overhead. As the students used to say in the FSM days, and many faculty members still say, academic administration is mainly useful for sweeping the sidewalks.

That theme isn't consistent with having a big administrative staff, and so conventionally, the department chairman, or the dean, or somebody in that capacity, gets to do a lot of sweeping that takes time and
Vaux: requires attention, but really isn't perceived as a significant part of the job, particularly. And that was, I think, where the strain came, rather than the multiplicity of hats.

Initially, Vice-President Wellman and Director Sharp provided a small budget. I think the initial budget was $20,000, which they dug up out of unallocated funds. That was eventually incorporated into the university budget, so that there was a small sustaining budget to provide for a few little projects, and a little money for functions.

The program initially involved a survey of the research that was being done and what the research needs were that people perceived within the university. That survey was kind of a re-do, almost, of the Wildland Research Plan, but from the university's perspective, and of course involving some other people besides those that had been previously involved in it. That job was done largely by the coordinating committee.

Then the other thing that was done was to lay on a series of conferences about wildland research needs. That's where some of this budget went, to support those conferences. Some of those, I felt, were fairly impressive affairs. The first one was held at the Ahwahnee Hotel in Yosemite Park. There were a couple of hundred people there, and there were some--

Lage: Were they mainly researchers?

Vaux: No, it was broader than that because the purpose of the conferences was to direct attention to the needs for more wildland research, and to try to generate some interest and support for a larger funding to meet those needs. There was first a general conference, and then there were, I think, three others. One focused on the particular needs of southern California, one focused on the particular needs of the north coast, and one focused on the particular needs of the central Sierras. I believe there were proceedings published for all of those conferences, and there was some good material that came out of those, in terms of the papers that were delivered, and so on. So it was off to a reasonably good start.

Wilderness Research for the Outdoor Recreation Resources Review Commission

Vaux: Then, through the good offices of Dr. James Gilligan, we got an initial lightning strike. Jim Gilligan came as a second member of the forestry extension staff, in the Cooperative Extension Service of the Division of Agricultural Sciences. Jim Gilligan had written his Ph.D. on the
Vaux: wilderness concept and the administration of wilderness areas and was always very much interested in wilderness and recreation. There was kind of an immediate misfit between Gilligan and the agricultural extension organization.

I had had the naive idea, "There's a growing constituency in forestry built around the conception of wilderness and forest recreation." This is the fifties, when forest recreation was just pyramiding dramatically, and anybody but a blind man could see that this was going to be a big thing in the future. So I had encouraged extension to get somebody who could deal with this area. There were all kinds of external groups—the Sierra Club, the skiers, recreation groups of all kinds—that needed to be serviced, in effect, by an organization—

Lage: And this was a service—the extension service—

Vaux: The extension service is essentially service.

Lage: Not research.

Vaux: No, it's not research at all. It's service. So I conceived of Gilligan developing a program inside the extension service that would establish contacts with those kinds of organizations, which seemed to me part of forestry and wildlands.

Ultimately, it turned out to be just a completely impractical idea, because the Cooperative Extension Service relies very heavily on organizations in the counties. The county people were totally remote and unperceptive of this largely urban concern, and I hadn't perceived that that was going to be an insuperable obstacle. So that aspect of Gilligan's program never really got off the ground—unfortunately, because he was a very capable man and an interesting man. But it was very difficult for him to survive the constraints that were simply built into the way Cooperative Extension went about things.

But, at about this time—and I guess the body was originally established in the Eisenhower administration—something called the Outdoor Recreation Resources Review Commission, ORRRC, was established, under the chairmanship of Laurance Rockefeller. It undertook a very extensive and costly survey of outdoor recreation in all its aspects, but some of the emphasis, naturally, was on wildland recreation.

So it was both a new thing and a dramatic thing because the commission had been organized to look toward legislation, and it was chaired by a very powerful person. It had a lot of money, and there were something like thirty individual studies of aspects of outdoor recreation commissioned by the ORRRC commission to be conducted by various research entities.
Vaux: Gilligan managed to wangle, I think it was a $200,000 contract, which in those days was big bucks for people like us, to do the ORRRC commission study on wilderness, which conceptually was a very, very important thing.

Lage: Did that take him out of Cooperative Extension, then?

Vaux: Cooperative Extension required him to take a leave of absence, which I thought was just reflective of their particular set of blinders. They couldn't see this as something that they could contribute to, other than making him available to take leave without pay—which he did, and he organized and ran that study.

It was an interesting study, and Gilligan carried it on quite successfully, although he was one of the kinds of people that sometimes had trouble meeting deadlines, and there was some difficulty there.

Lage: So then he came in under the Wildland Research Center.

Vaux: So he was an employee of the Wildland Research Center. The name now, I gather, has changed to Wildland Resources Center, but it was originally Wildland Research Center. He was the Center's employee, on leave from the extension service. Then, when the ORRRC study was done, he went back to the extension service.

That study was published, and I think was quite a good publication. It was really the first sort of definitive thing that came out about wilderness areas. There was a lot of Gilligan in there. There was a lot of another man, who will come into our story in other connections—David Pesonen, who, at that time, was working for his master's degree. He was a very ardent Sierra Club and wilderness devotee, and he became sort of Gilligan's right-hand man in doing the ORRRC study. David writes extremely well, so he did a lot of the more general types of writing for the wilderness study.

Lage: And he got the Wallace Stegner letter.

Vaux: Well, that's what I was going to talk about. What's your perception of that?

Lage: I did do a short interview with Wallace Stegner for the Sierra Club project, and we talked somewhat about the genesis of that letter.

Vaux: I see. Then maybe what I have to say about it might be of some interest.

Lage: Tell me from this perspective.

Vaux: Pesonen asked Stegner to—he asked a whole lot of people to write what they thought about wilderness, and then he kind of compiled these things into a chapter on sort of the philosophy of wilderness, as reflected in the thinking of these various people. Stegner wrote this very remarkable letter.
Vaux: I think David had already incorporated it into the chapter, and the chapter had been pretty well completed and reviewed. One day David came in to see me, and he said, "I hope you aren't going to be upset, but something's happened here that I can't control. Stegner has sent a copy of this letter to Stewart Udall, (who was then Secretary of the Interior), and Udall has asked for permission to use it, and Stegner's given it to him," which essentially meant that we had lost the rights of prior publication on the thing. This wounded me a little bit because I thought the letter was quite a remarkable piece of work, and it would have been nice to have its first publication in the wilderness report, rather than to have Udall appropriate it, as he did, in his speech to the Sierra Club Wilderness conference. But given the personalities involved, there was not an awful lot that you could do about it. David wasn't about to do anything about it because I think he thought it was just great if Stu Udall would use it and get that much more publicity for it, and so on—which, from his perspective, I'm sure, was right. But I always felt it was a little bit of power run rampant there, at the expense of ethics.

Lage: I often have seen it referred to as coming out of the wilderness report, though. Maybe it brings attention to the report now.

Vaux: Maybe it does.

Lage: It was published in the Sierra Club Bulletin, I think, and given credit for having come from that report. And then again, it came out in Living Wilderness [magazine of the Wilderness Society, December 1980].

Vaux: I was disturbed about it, not so much by the ethics thing but because the wilderness report was supposed to be an objective, balanced report; I had the feeling that using it the way Udall did at the wilderness conference, prior to its publication, in some way prejudiced the objectivity of the report.

Lage: I can see that. In people's minds.

Vaux: Some people's minds. That's enough, certainly, on the wilderness report. That was the one major project that the Wildland Research Center carried out at that time. There were several smaller, I mean very small, research projects carried out in individual departments of the center, but they were of no great significance.

At that point, which would be 1962, the Wildland Research Center almost totally lost momentum, because I was hospitalized for two months and out of circulation for three months. And when I came back, I was not competent to cope with the various hats. I really never did, throughout the remainder of my deanship, recover the energy to try to re-energize the Wildland Research Center because by that time I had had a clear perception of what it took to energize it. I thought it was
Vaux: going to take somebody assigned to it on a part-time salary basis to get it underway. Given that perception, I thought I ought to conserve my energy for other things. I think John Zivnuska, my successor as dean, probably had somewhat the same perception of it. By the time he came along, why, the Wildland Research Center was barely breathing anyway.

So it's interesting to see it, twenty years later, come back to life again with some apparent vitality. But again, with some paid direction, which I've always thought would be necessary.

Lage: They do have a paid administrator now?

Vaux: Yes.
Changing Student Perspectives

Lage: Shall we talk now about students?

Vaux: Certainly the nature of the student body has changed tremendously from the postwar student group, which I had occasion to know when I first came as a faculty member; they were strongly professionally and job-oriented and were there in very large numbers.

Lage: You mentioned a lot of GIs coming back.

Vaux: Yes, yes. Those students had very positive job orientation, and they wanted to get preparation for getting a job and get on with it. Then during the fifties the large numbers declined very materially, as the GI group got on through, and the size of the school became quite a bit smaller. People's objectives, I thought, remained pretty much the same, down through those years in the late fifties and early sixties.

The main difference was smaller numbers of undergraduates, but a gratifying growth in the number of graduate students. Because graduate work was becoming more perceived as important in forestry, and there were many more students applying for graduate work. The school had a good reputation as a graduate school, an excellent reputation, I think. So the graduate student numbers became much more important than they had been previously, and vis-a-vis the undergraduates they were more important because the undergraduates were dwindling in numbers at that stage.

The job market all during that period, with some ups and downs, was reasonably good, both in the public agencies and in private industry. So that things moved quite well, despite some changes.
Lage: Maybe you're going to get to this, but I noticed in one of the things you've written on forestry education, you mentioned that forestry seemed to select a certain type of student, who perhaps was less people-oriented.

Vaux: I've often said not that forestry selects them, but that kind of student selects forestry.

Lage: Yes.

Vaux: Yes. I think there's a lot of self-selection that goes on there.

Lage: And what type of--

Vaux: This is a caricature and should be interpreted as a caricature, but a lot of students select forestry because they like the outdoors, and wrongfully often, they perceive it as a place where they get to spend their life outdoors in a natural environment, and it's appealing to a lot of people. I think the other side to that coin is that they're very often people who aren't so comfortable on the urban scene and aren't so comfortable in intensive human relationships.

Lage: Which turns out to be a good part of forestry.

Vaux: Which turns out to be an increasingly important part of it, anyway. The change in student perspectives, I think, came about, not so much in terms of the FSM and the student strike. It was much more associated with the growth of the environmental movement.


Vaux: The FSM had less impact on forestry students and forestry faculty than it did in many other areas of the campus. The nature of the issue was not one that got most of our students upset. The FSM got me particularly upset for a very specific reason, which was that for two years we had been planning to celebrate the fiftieth anniversary of the School of Forestry.

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Vaux: We had spent two years in planning the fiftieth anniversary celebration of the founding of the forestry program at Berkeley, and this was to be recognized by a two-day symposium to be held on campus. We had done a lot of advance work to alert the alumni and friends of the school to get everybody to come. There had been a program prepared with various
Vaux: well-recognized speakers in the forestry field to come and convey their congratulations and also say words of wisdom. A history of the school by Paul Casamajor had been published.*

Everybody arrived for the symposium in the Pauley Ballroom on the second floor of the Student Union building, on December 6, or 5, or whatever it was, of 1964, and there were six thousand students in the plaza outside being harangued by Mario Savio, and the major FSM confrontation incident was fully underway. These alumni had to fight their way through the crowd to get to the meeting.

Lage: It seems amusing, in retrospect, but I'm sure it wasn't for you then.

Vaux: It wasn't amusing, it was just terribly stressful. Because by the time the alumni got to the meeting they were upset by what they had seen outside. Most of them had no perception of what was going on, and I didn't fully understand what was going on.

Lage: This was right at the beginning.

Vaux: Yes. Well, it had been going on for several months, but this was the first time that it reached a real crescendo. The alumni were mad, and I had to do what I could to try to calm the waters. I have always been very grateful to Ed Strong, who was chancellor at the time; he had agreed, long before the FSM had ever been heard of, to come and make a few welcoming remarks. And I always thought that it was just incredible that Chancellor Strong, in the face of just that awful pressure that the FSM generated on people in that kind of capacity, took time to come over and welcome the alumni, in a very philosophical and easy way.

I think, as much as anything, his appearance sort of helped us to restore some sense of significance to the occasion. Although I think it was almost impossible to do in the light of that situation, which went on pretty much throughout the symposium. We were stuck with it because we had our banquet in the Pauley Ballroom.

Lage: You were right in the center of things.

Vaux: There were plans that you couldn't change at that time of day, and even if you had changed them, it would have destroyed the function of the occasion just because you'd had to change the plans. But apart from that specialized aspect of it, I don't think the FSM had very much impact on forestry, other than a general impact on the campus, which, of course, was devastating.

Vaux: Much more significant at the forestry level was the situation with the Cambodian invasion, and the so-called student strike, which the interview outline indicates was May 1970. I hadn't realized it was so long after the FSM thing. Of course, by that time I was no longer dean, and I didn't have to bear the immediate brunt of that. That was John Zivnuska's cross.

That had much more influence on the students, in the sense that the issue there was, to a considerable degree, the war. The students were sharply divided on that, into three groups, really. Some felt very strongly, personally, about it, some pro, some con. And then a third group, and I wouldn't have any way of knowing what the numbers were, but a third group felt they were there for an education, and their careers depended on their education, and they didn't want a bunch of this "fooling around" to interfere with their education.

So that was a very crucial incident for the forestry school, and various people took various types of individual stands on it. In my own classes, I was particularly sensitive—I tried to be sensitive to the concerns of all the students, but I saw a particular responsibility for those who wanted to get their education, and I felt they shouldn't be shortchanged. So we held classes, sometimes here in this house, sometimes in the students' houses, or someplace. In other words, we tried to carry on the classes even during the strike, for those who wanted to come.

There was a meeting of the forestry school student body that was organized by some of the students—many of whom were confused and puzzled and didn't know what to do—to sort of have a family meeting on the thing and see what could come out of that. That meeting was held in a glade up in Tilden Park. Because the university was shut down, there were no university facilities available. A very large proportion of the student body and the faculty attended that meeting. I think most of the points of view of these three different perceptions of the problem were reflected.

Dean Zivnuska spoke very forcefully, but very sensitively, about his responsibilities as dean of the institution, and his responsibilities both for the academic aspects of the problem and for the use of university property. Because, you remember, there were all kinds of things going on with newsletters and propaganda things being put out, and so on. There were concerns about using university property in this connection, as well as the more direct concerns of the students themselves.

As nearly as I can say, what came out of that was an expression that the forestry community had a sense of identity and a sense of family that had persisted for a very long time. And that was a worthwhile value to people in and of itself. One might judge these other external issues as one might wish, but one ought to try not to lose the sense of integration.
Vaux: and communal spirit that the forestry group represented: that was a sufficiently important value not to be sacrificed to these others. In other words, there was a sort of a very loose sense of, "Let's see if we can't live and let live, and retain our sense of forestry community with some tolerance for this division of views."

Lage: Was this generated by the students? I have the general idea that, during this period, that commitment to the communal feeling of the group was not as strong as it might have been earlier. Did this sentiment come from the students?

Vaux: The commitment to communal feeling must have been there, even though less often expressed. During the Tilden Park meeting I made a few remarks pointing out the importance of such commitment. Those remarks were not necessarily so well couched, but in the context of the problem, they presented a different focus. Most of the students reacted to it quite quickly.

Lage: It was something they responded to?

Vaux: That everybody could respond to without sacrificing their primary focus. That, I think, took some of the tensions out of it. You know, ideas don't come from individuals. In a political situation, an idea is accepted if it's any good. That acceptance isn't any sort of individual thing; it's a whole lot of people who see the validity of some kind of concept and accept it, maybe in quite different terms from the person who advances it, even.

So, I don't want to stress my personal role, here, although I suspect I actually put into words enough of what many people were thinking, so that that became a way of moving ahead into something that would build, not destroy, personal relationships. At any rate, after that meeting, the forestry school was not disrupted internally to the same degree that many other departments were; either in cleavages within the faculty, within the student body, or between faculty and students.

It was very much of a live and let live thing, although certain groups of students were doing some things that other students thoroughly disapproved of, and certain students were doing things that certain elements of the faculty thoroughly disapproved of. A kind of a live and let live atmosphere, I think, dominated--until that crisis was over, anyway.
Students and the Environmental Movement

Lage: Aside from those crises, there were, I'm sure, changes in students over this time period, the fifties through the seventies.

Vaux: Well, yes. The main thing there was not really related to the crises at all. That was the shift in the type of people entering as students that accompanied the development of the environmental movement. So we began to get students, at both the graduate and the undergraduate level, who weren't interested at all in the narrow concept of forestry. They were quite interested in a broad concept of environmental science, which really rested on the same scientific foundation as forestry.

They found the forestry school as one of the few places in the university that offered a curriculum that was broad enough to give them that kind of a foundation and secure their objectives to become qualified to do something in environmental protection, or whatever else it might be. And so we had quite an advent of students who probably would have never taken forestry, per se, in the narrow definition of the term, but who took forestry as a way of getting either an undergraduate or a graduate program that would educate them in the basic scientific aspects of biological systems.

Lage: Did this lead to the school offering broader--

Vaux: We were already offering something of this breadth, and we did make it broader.

Lage: You did change the name of the school.

Vaux: Well, I had wanted to do that for a long time, and that simply brought about a useful moment to do it. We changed the name to the School of Forestry and Conservation [in 1968], but that was long after I stopped being dean. There also was some broadening of the program, some additional electives offered.

Lage: Didn't you offer a new major at this point, in conservation of natural resources?

Vaux: The conservation of natural resources major was originally organized by a joint committee of the College of Agricultural Sciences and the School of Forestry. It was a special major for a while, sponsored and operated jointly by the college and the school. That was kind of a smorgasbord, and I'm not being unduly critical of it.

It was obviously an attempt to respond to a big student demand for something in environmental science. The problem was that the students didn't necessarily want something very rigorous in environmental science. How to structure a program that would respond to a lot of student interest
and awareness, and eagerness, but not become so narrow as to repel those same students, was difficult. The curriculum in conservation and natural resource studies was formed jointly by the school and the college. I think, if I remember rightly, I was a member of the inter-school committee that formed that curriculum. But, very shortly, that got swallowed up in the reorganization and became a key curriculum in the new College of Natural Resources.

Lage: Which we'll leave for another--

Vaux: Yes, we'd probably better leave that for another day.

Lage: Anything else to say about the students?

Vaux: Then we got more of the general students who hadn't been interested in forestry but were interested in environmental management and environmental protection, in some cases. This gave a different view to the undergraduate student body mix, and also gave quite a different look to some of the graduate student mix. Because where, previously, most of the graduate students, a big bulk of them, had come from undergraduate majors in forestry, an increasing number of the graduate students came from undergraduate majors that might have had nothing to do with forestry, but who had an undergraduate degree in political science, or art, or something, and wanted to lay some environmentally relevant graduate work on top of that. We got quite a bunch of those kinds of students.

Lage: Did this make it difficult to judge people for admission to graduate school? Was there any feeling that--

Vaux: Sure, there were some problems there. There were some fairly rigorous standards of qualification that had to be met before you were eligible to work for a degree. Many students came as graduate students, but made up what were conceived of as undergraduate prerequisites. I was an example of that myself when I came as a graduate student.

Lage: It's nothing new.

Vaux: So there was nothing new about that. It just went on on a larger scale, I think. And, I think, from the standpoint of the school, that was all to the good, at both the undergraduate and graduate level, because while it dulled the focus on forestry as a discrete, specific major, I think it broadened the perspectives of student interests, and therefore, perforce, the perspectives of faculty interests, and made the program more diverse, richer, broader gauge.
Vaux: I conceive of this as "a good thing," in response to these same external pressures that we talked about earlier on, in connection with student self-selection. The self-selection wasn't working as narrowly as it had previously. There was another basis for selection besides the hunting, shooting, fishing image.

Lage: Did it create strains? Because obviously there was some advocacy of environmental views.

Vaux: Sure, it created some tensions, again, among faculty members with differing concepts of what the educational program ought to be. But I don't think it was anything that wasn't ultimately resolved in terms that were reasonably satisfactory to everybody. This sort of tension among students certainly enriched the educational experience. It introduced them to real-world conflicts they would have to deal with professionally.

Lage: Did some of the students come with the idea that they were going to be advocates? I mean, more interested in advocacy for the environmental movement than, maybe, securing a really strong scientific background.

Vaux: I think the students who felt most strongly advocative in their inclinations for their own careers usually perceived the rigor of these related forestry and conservation majors as more than they needed to pursue the advocacy thing, and went elsewhere. They might come over and take a few courses, and that sort of thing. There was a lot of that.

So that, contrary to previous experience, during this environmental period there were a good many more non-forestry majors in our courses. Previously there had often been 100 percent forestry majors in the courses, which encourages narrowness of the educational experience.

Role of Faculty Wives##
[Part II, Interview 3: January 14, 1986]

Vaux: Can I talk about another subject that we really haven't talked about, but I think I ought to say something about? It's a little closer to the forestry school than maybe the next one you have in mind. That's the subject of the role in the forestry school of the faculty wives. This is something that we haven't talked about at all, and as I thought about our earlier discussions, it seemed to me it was an oversight that needs to be corrected.

Because both when I was here as a graduate student and when we came back and joined the faculty in 1948, from then on well into my deanship, I think the role of the faculty wives in several dimensions
Vaux: of the school's activities, was very, very important. On the one hand, they did a lot to assist in developing a kind of unity, as I always felt, of the faculty, and to avoid the divisions that come in some faculties. By well-conceived, ostensibly social, activities, they developed a sense of unity and fellowship in the faculty.

Lage: Was this a conscious effort?

Vaux: It was our perception of the way things were done in the University of California. Of course, how they were done depended a lot on the personalities of the individual people. But I know when I became dean, why, Jean just took it for granted that she ought to be responsible for getting the faculty wives together every month, seeing that they had a good time, having faculty parties periodically, and this kind of thing.

I think that was more or less representative of many departments on the campus. There were a lot that didn't, but it seemed to me the ones that had strong activity at this level had less problems internally--faculty division, and so on--than the others; so I always thought that was extremely important.

Then it went to the student level, particularly the graduate students, where the faculty wives were involved in certain campus-wide activities to support graduate students in a variety of ways. They gathered surplus cooking stuff and furniture and had that available when impoverished students came in the fall. They did social activities for the students. Of course, there was a foreign students hospitality committee that the wives ran, and I guess that still goes on.

But this was a very active involvement by the faculty ladies all through that time. Forestry may have done somewhat more of that than others, but it was kind of characteristic of the campus. Then, I think, that whole area of activities was pretty well--I don't know what the proper verb is; I won't say torpedoed, but undermined is maybe the better way to describe it--by three kinds of things, all of which happened more or less about the same time, I'd say beginning around 1960.

One was the economics of living in Berkeley, so that more and more faculty families began to live away from Berkeley, which made it harder: fewer people could be included in this rather close fellowship kind of thing that went on. Also the proportion of professionally-occupied faculty wives, who didn't have time to do this kind of thing, increased.

Then, as far as the relationships with students were concerned, the student end of this relationship, the troubles of the 1960s raised some real problems for social activities with the students.
Lage: Was there less good feeling?

Vaux: I don't think it was so much less good feeling, as it was it was just more difficult. I mean, if there were intensely emotional demonstrations on the campus, it wasn't a matter of bad feelings against students, it was just a matter that everybody was too busy worrying about other things to get very involved in a social activity.

I think there's been some comeback in the importance of that sort of thing since then. That's my impression, at least. I don't think it's anywhere near where it used to be. I think the ongoing thing that is significant, and that will prevent it from ever occupying the role that it did before, is that most of the faculty wives are now professional people themselves: they've got full-time jobs, and they haven't got time to do this kind of monkey business. But, it was, to my mind, a very important and useful element of academic life at that time. I personally greatly regret its passing, because it was nice, in both dimensions.

Lage: I think sometimes we forget the value of some of these activities. The emphasis is now on women realizing themselves in a professional field.

Vaux: Yes.

Lage: And there is something lost there, as well as gained.

Vaux: We were always impressed, because right about as this thing was falling apart, we were on a trip in Turkey, and I was in contact with a man named Abe [Amihud] Goor. Abe Goor was a Palestinian forester. He'd come and graduated and taken a master's degree in forestry in Berkeley in the 1920s. He asked us out to dinner one night when we were in Istanbul.

The whole purpose of his doing that was to sit Jean down and tell her how important to him it had been to be entertained socially by faculty wives when he was a student here in Berkeley. He said that was one of the most important things that he got out of his educational experience: he learned what it was like to be in a social context, rather than a professional one; he never had exposure to that before, and it gave him background and lessons that were of value to him all his life. So he was urging us to be sure and continue to do this. Of course, we came home and the FSM followed. [laughter] It wasn't so easy to do.

I don't think I need to belabor the point, but I wanted to record somewhere that that was, to my mind, a substantively important thing, as well as something that added a lot of pleasure, I think, to academic life.
The Academic Senate Committee on Educational Policy

Lage: I wanted to ask you about the Committee on Educational Policy [CEP] and particularly the role in evaluating the black studies program. I did a little bit of reading yesterday, looking back at the Daily Cals from that time.

Vaux: You're probably much better briefed on this than I am because I think I transferred all my educational policy documents to The Bancroft Library, so I haven't been able to do any homework on that at all. I have to confess that a lot of it is quite fuzzy in my mind. So I can talk about what my impressions were and have to let it go at that, and they may be fairly vague and useless. In the letter you wrote--and incidentally, I find your letters extremely helpful in preparing for these affairs--you said a few words on CEP, and its purposes and degree of authority and leadership.

The Committee on Educational Policy's jurisdiction is fairly broad. It's about as broad as the term "educational policy." It's concerned with admissions matters, undergraduate degree requirements, curricula, grading policy, teaching improvement. Almost anything in the sphere of actual teaching comes under its jurisdiction. Now, with two rather trivial exceptions, the Committee on Educational Policy doesn't have any authority, as I understand it. It has, I think, over the years, a very substantial influence on the views of the Academic Senate because many of the views of the Academic Senate are expressed in language developed by the senate committees, and the educational policy committee would be one of the primary ones among those.

The only things I can recall where the Committee on Educational Policy had any actual authority was that Carl Helmholz, who was chairman of the committee when I first went on it--and incidentally, if you want a good interview on these kinds of things, as well as on campus governance in general, somebody certainly ought to get an interview with Carl Helmholz, if you don't have one already. Do you have one?

Lage: No, no, we don't.

Vaux: Well, you should, because he's always been very much interested in governance and has served on virtually every senate committee that there is, I think. And I'm sure would have insights and probably significant recollections into some of these exciting things that you speak of, where I'm a little vague and detached from it.

Lage: He probably has a pile of papers, also.

Vaux: Probably does, yes. I'm sure he does. So somebody ought to get on Carl's trail and do something about that. Of course, he was chairman of the physics department at various times and would have significant
Vaux: recollections there in terms of the annals of the physics department. Also he was interested for a long time in this faculty governance thing, but Carl was much more a behind-the-scenes kind of worker, and a facilitator, than one of the people who was out charging and making dramatic speeches on the floor of the senate and that sort of thing. His point of view, always, I think, was one of trying to accomodate conflicting interests.

There were two very trivial things--Carl Helmholz and I used to joke about it--they were two things that never, ever got removed from the Committee on Educational Policy's agenda. They were always there for one reason or another. One was the American history and institutions requirement, and the other was ROTC. The committee used to meet every two weeks, as I remember--

Lage: That's frequent.

Vaux: Yes, it met very frequently. And sometimes more often, particularly in times of crisis.

Lage: Would your agenda be set by what the Academic Senate asked of you, or what the chancellor asked?

Vaux: A lot of it was referred by the chancellor; a lot of it was referred from issues that rose on the floor of the Senate and were sent to the committee for some kind of advice and guidance. Some of it was statewide business, in the sense of coordination with other campuses on things like admissions and degree requirements and that sort of thing. A little of it would come internally from the committee itself, but much of it from other committees of the senate, including the faculties of the schools and colleges, which would initiate changes in their regulations that they wanted to see made. They would always come to the Committee on Educational Policy for review and comment before they were acted on.

The functions of the committee and the values of the committee, it seemed to me, always were quite significant. Its ostensible charge, I think, was to maintain a reasonably unified educational approach in a very diverse and large institution where you had educational programs with actually tremendously different objectives. Because of the existence of a Graduate Council, the Committee on Educational Policy I think was more concerned, though not exclusively concerned, with undergraduate curricular matters. But it was kind of the unifying body to see to it that standards and approaches were reasonably uniform among the various units of the university.

I always thought it had some additional very important functions that flowed from that objective. One was that I always felt it was an important device for knitting together a very diverse faculty. You
Vaux: I know Clark Kerr's famous dictum about the faculty of the university being a bunch of highly independent entrepreneurs held together only with common concern over parking. [laughter] That may not be too exaggerated. The educational policy committee was a fairly large committee, twelve or fourteen people. Because it drew deliberately from all quarters on the campus, I think it served a very valuable function in allowing viewpoints from different sectors of the campus to be circulated and penetrate other sectors of the campus, in ways that otherwise wouldn't have been possible.

Certainly, it was valuable in reinforcing institutional memory, if you're acquainted with that term, which I think in an organization as large as the University of California, is terribly important. Because, as personnel changes, people forget what happened five years ago. It's very easy to waste a lot of time reinventing the wheel, or to fail to recognize that a particular problem isn't just something new and different, but one that's been going on and therefore has to be looked at in different terms than if it happens to be a function of the particular moment. I always thought the educational policy committee was an extremely important and effective agency in building and maintaining an institutional memory.

Lage: Was Carl Helmholz chairman of it for quite a long while?

Vaux: The chairmanship of it rotated pretty frequently. I think Carl was chairman for two years when I was on it. Some of the other chairmen I served under were there for only one year. I can't remember, frankly, how long I was on it. I think six years, though maybe not all at once.

Lage: Did it include some of the younger faculty, or was it mainly senior faculty?

Vaux: It was mainly—not exclusively, but mainly—all tenure people; I think that's a matter simply of the policy of the Academic Senate that assistant professors should not be giving that kind of time to non-research activities. So they were all tenure people and mostly full professors. I don't know what the average age is now when people attain the full professorship, but I'd say the age ran from late forties to close to retirement.

In some sense, it functioned as a forum to resolve conflicting views within the Academic Senate. There was quite a little of that that went on; there would be some quite vivid debates from time to time on differences of view. Usually those were resolved in some way through language arts, trying to get a [modus vivendi] that would permit these views to both be recognized.

And there was a lot of training that went on for administrative jobs, in the sense that you got an excellent perspective, through a lot of cases, on how the university actually worked, so that was a valuable function.
CEP and the Ethnic Studies Program, 1969

Vaux: You mentioned the black studies thing. Again, for reasons of clarity, I think we need to shift the terminology a little bit and talk about the ethnic studies development because that was what came primarily before the Educational Policy Committee when I was on it. I can't put dates on this. You'd have to check back with whatever's in the files.

Lage: The height of this controversy and your deliberation on it was 1968-1969.

Vaux: At any rate, my recollection is that at the time the matter initially was referred to the Educational Policy Committee, there was a black studies program operating out of the chancellor's office—a very unusual kind of academic organization, which was regarded as strictly a temporary thing. It was quite obviously at least a preliminary response by the administration to some of the pressures that were coming on the university from outside.

The thing that I recall most clearly as being the focus of CEP's discussions was a proposal to establish a third world college. This proposal had generated from some quarters in the faculty, and I guess with a good deal of assistance from outside the faculty. Basically the third world college was seeking an academic sponsor of some sort. Of course, it's hard to get an academic sponsor for a new college because everybody's already got a college affiliation, and there are all kinds of good reasons why you shouldn't have another college.

There are a lot of dimensions to it that I can't recall right now, but it seems to me one of the important ones was that the third world college proposal had a whole lot of dimensions to it that went beyond providing a more comfortable academic home for minorities to pursue academic activities. The third world college had written into it all kinds of proposals for community action and community interaction, where there might conceivably even be community involvement in, say, academic policy, and this kind of thing.

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Vaux: There was that whole array of political problems arising out of the untraditional breadth of the activities that the third world college proposal envisaged for an academic institution. In other words, entirely apart from the personnel and the subject matter requirement, it suggested activities that weren't traditional in the university. So a whole array of political problems clustered around that.

Then there was a separate set of administrative issues. Assuming you could get an educational program of some kind defined that met people's needs and was acceptable, then who, how, and where would it be administered? Of course, the people who were most strongly supporting
Vaux: the third world college, viewed incorporation of any of those activities in the College of Letters and Science as the kiss of death and figured that that was essentially a contradiction in terms. They simply couldn't do their thing in the College of Letters and Sciences.

Lage: So they didn't want a department, or--

Vaux: So that's why they wanted a third world college. It's not so much a question of a department, because any college has departments.

Lage: They didn't want to be a department within L&S?

Vaux: Entirely apart from the issue of department, they didn't want to be in the College of Letters and Sciences and subject to its constraints. I think they perceived, and probably correctly, that in some way they would be smothered there. So there was a set of political issues surrounding that.

Then, of course, there was the general uneasiness--this was at a time when budgetary constraints were beginning to come on the university, and the university hadn't fully learned how to deal with a constrained budgetary situation. So everybody saw creation of any new academic unit as adverse in budget terms because it would have to be funded eventually out of a fixed budget. So there were plenty of places where issues could arise and a lot of dimensions to them.

Then, cutting across all these issues and involving all of them to some degree was the question of outside, off-campus, pressures versus internal campus viewpoints. The one was not the mirror image of the other. That created a lot of problems because the outside pressures were there, the outside political pressures, and this was quite unprecedented, I think, for something like the educational policy committee to be subject to off-campus pressure.

Lage: When you say "off-campus," are you thinking pressures from the community, the third-world community, or from political figures?

Vaux: From the third-world community. People from that community would come and address the educational policy committee.

Lage: So it wasn't just the students, the third-world students, but also--

Vaux: It was usually a third-world student channel. But as I recall it, I think there were some people who may not have been students who actually were in contact with the committee. Or, if not, it was pretty obvious that the students were simply the channel of communication.

Lage: Then there was the background of the third-world students' strike. I had forgotten that until I looked at the Daily Cal.
Vaux: Can you reinforce my background on that? I know this all came about at the time of the strike, and that was part of the pressure, too.

Lage: Right. Very divisive, and somewhat threatening.

Vaux: Oh, yes, it was.

Lage: The fire at Wheeler Auditorium, which of course was never attributed to anybody, was part of the background.

Vaux: The committee was deliberating this matter all during the time that was going on.

Lage: And there must have been a tremendous amount of feeling among the faculty one way or the other.

Vaux: There were very intense faculty feelings, yes. The most intense faculty feelings that I ever encountered, I think, in any issue in the university, with the exception of the FSM. Very intense feelings. Of course, the faculty had no monolithic position; there were people in the faculty defending all the various viewpoints that came across.

As the thing evolved, two things came out of it. First of all, there was the black studies program looking for a home. There was a difference in view between the black students and faculty and the rest of the minority students and faculty. You'd have to go to somebody who had a sharper view of the situation than I did to see what really this was all about.

But my perception was that the black students and faculty decided that they could function and achieve their objectives as a department within the College of Letters and Science. There was a minority faction among the black group that didn't agree with that. All the rest of the minority groups thought the blacks were torpedoing them, because they were joining the enemy and leaving the other minority groups to struggle for themselves. Whereas if they had allied themselves with the third-world college movement, that would have given that movement more strength. But their willingness to go in the College of Letters and Science kind of split the minority group and weakened their political force.

All the ins and outs of that I don't know, but I perceive that as something that was going along all during this period of time. I think the main outcome to which the Committee on Educational Policy contributed was to design and establish something called the Council for Special Curricula. That was designed really to provide some kind of ongoing administrative vehicle for an ethnic studies program.
Vaux: The ethnic studies program certainly wasn't the only one organized under the Council for Special Curricula, but it certainly was one of the first. I'm sure that, from the organizational standpoint, one of the major purposes of establishing it was to provide a place for that curriculum.

Lage: So this was set up as an alternative to putting it in L&S or creating a college.

Vaux: Yes.

Lage: Is that the way it was finally resolved?

Vaux: That's the way it was finally resolved, yes.

Lage: And did that idea come out of the CEP?

Vaux: I can't remember who originated it, but it was formally structured and put together I think largely by the Committee on Educational Policy, with, of course, contact from a lot of other senate committees who were also involved; nothing ever gets done as simply as just one committee deciding to do this. But I think the Committee on Educational Policy made a substantial contribution to the development of the Council for Special Curricula.

Lage: How about the chancellor's office? Did they feed directly into this committee?

Vaux: The chancellor's office was heavily involved. It used to be that one of the vice-chancellors would participate as an invited guest of the educational policy committee a good deal of the time, for purposes of liaison and this kind of thing. But the chancellor's office was very careful not to appear to try in any way to influence the committee; he or she was primarily a resource person to get information.

Lage: Was part of the background, then, the faculty's interest in maintaining its power over curricula? As opposed to--the chancellor was under a lot of political pressure, say, from students and community.

Vaux: Well, sure. And as I say, the original black studies program in the chancellor's office was strictly an interim measure, and very unprecedented for that very reason because it really didn't have any very clear sanction from the Academic Senate. And to have a teaching program that didn't have sanction from the Academic Senate is pretty disturbing. In a way, the Council for Special Curricula was a device to eliminate the necessity to have such things. It provided for deviant curricula that would meet certain standards and a mechanism that wasn't a departmental and college mechanism for governing them.

I think the ethnic studies people eventually accepted that--simply recognizing that that was the most they could get.
Lage: Can you give me any idea what it was like to function in the midst of all this turmoil and division? You were working along at the committee level, and I get the impression that at those times the students had very little patience with committees, and procedures, and the like.

Vaux: That's right, that's right. I think you just respond as comes naturally. You recognize that the institution has to continue to function in certain accepted ways, and if you can find ways of making progress toward accommodating the students' objectives within that framework, then that's a constructive effort, and you go ahead and try to work that out, even though it may not make the students particularly happy, with the constraints.

As a committee member, I'm sure I never got exposed to the full thrust of some of these things to the extent that the committee chairman might have. As spokesman for the committee, he had to make presentations, and take the rap, and possibly be subject to kinds and levels of demands that individual members of the committee were never exposed to.

Lage: Is there anything else to add on this subject, do you think?

Vaux: The only thing I would add is a sort of personal aspect of it, because I looked at the ethnic studies issue through somewhat different glasses, I think, than most members of the faculty might have looked at it, because of my personal upbringing. My parents, who essentially were among the last of the Victorians in their point of view, but also Quakers, had been heavily involved throughout most of their lives in work to better the condition of blacks, of American Indians, and to a degree, through some work my father did--he was treasurer for a missionary university in west China.

So from the time I was knee-high to a grasshopper, I had had some contact, through that background, with American Indians, blacks, not with Mexican-Americans, and practically none with the Orientals, but quite a little exposure to the problems of American Indians and blacks. That made a profound impression on me; and because of my parents' interests and the way they had worked, I was conditioned to be very sympathetic to the problems that these people were expressing.

So I always felt, "If there's any way that I can advance those causes legitimately within the university, I ought to do it." So, apart from the formal activities of the educational policy committee and simply as an individual faculty member, I used to meet occasionally with some of their committees and try to help them understand the real organization of the university and the nature of the problem that they were butting up against. Because they didn't have any really good source of information about that. You know that the university's a tremendous maze to anybody who's really not involved in it, an almost incomprehensible one.
Vaux: I thought that might be helpful and be a service. And that was advantageous because it gave me some points of view and information that I could in turn plow back into the educational policy committee.

Lage: Would you meet with the organized groups, the leadership groups?

Vaux: There was a committee that was headed by [Jerrold] Takahashi, who's a professor in Asian Studies and was head of the Ethnic Studies Department when it first achieved departmental status. He was the chairman of a very small group, which was kind of a faculty steering committee group, that was trying to make the ethnic studies thing function in some way.

Lage: Were they receptive to this kind of explanation?

Vaux: Oh, they invited me to participate with them. Because I guess through contacts on the educational policy committee, when they made their presentations there, they may have sensed that I had both some information and an attitude that they might be able to use.

Also, I felt I had something to offer them in the sense that forestry had had its problems, that I talked about earlier on, as a non-conventional academic subject. So I could both sympathize and, in limited cases, see some ways of approaching problems that could have been useful to them. So that was kind of parallel to the educational policy committee activity and interacted with it but was separate from it. If I was able to contribute anything to that situation, I suspect it might have been through those kinds of contexts, rather than through the educational policy committee.

Lage: Would you distinguish yourself as being more sympathetic to the students' aims, or the third-world--

Vaux: Let's say third-world, because it was both students and faculty. I think I had a much broader base for understanding the problems they were trying to deal with, both from my family background of long-time awareness of the Indian and black realities, which I think was a background that most people didn't have at that time. And from kind of being an outsider from the academic holy of holies myself, I knew what it was like to be trying to battle the inertia of the monster.

Lage: That's an interesting comparison.

Vaux: I think that was real. I'm sure there were other people who may have been just as sympathetic, and had much more weight and much more savvy in the councils of the university, and may have been much more effective in what they actually did. I felt my role was a kind of a personal one, just being a sympathetic listener to their problems, and a person who might be able to give them some encouragement, "All is not lost, keep a stiff upper lip," this kind of thing. I think that's all on educational policy, probably, that I can dredge up without some homework.
VIII THE CREATION OF THE COLLEGE OF NATURAL RESOURCES

The Conservation of Natural Resources Curriculum: Response to the Environmental Crisis

Lage: Shall we turn to the College of Natural Resources? It was finally formed on July 1, 1974, but there was a lot that led up to it.

Vaux: Yes, there was a great deal that led up to it. I can't remember when it really began, but it certainly came out of the environmental crisis of the late sixties. The first step, really--and this was strictly a response to the environmental crisis--was that there was a lot of student disaffection and a lot of faculty disaffection from the existing educational structure, which arose out of the fact that the entire university program was seen by many people at that time as one that had no room in it for real in-depth study and work on--I guess the term to use is "systems ecology."

Of course, there never was, and never will be, a department of ecology, but there were ecologists scattered around in many departments. There were some in botany, there were some in forestry, there were some in entomology, there were some in a great many places. The departmental concept, both in research and teaching, of course, was dictated by scientific method and what that implies about specialization: seeking knowledge through going deeper and deeper and deeper into lower levels of organization of matter. And nobody going the other way, which was the way the systems ecologists wanted to go, to put things together into more and more comprehensive and complex organizational structures.

So under the impact of the environmental movement, one of the responses to that was for some people in the School of Forestry--as I recall, it was mainly Bill Libby and Arnold Schultz--and some people in the then College of Agricultural Sciences to get together. They had a committee, and I served on that committee for a while, a committee jointly appointed by the deans of the school and the college.
That developed something called a curriculum in conservation of natural resources, a CNR curriculum, which was administered jointly by the faculties of the two schools because neither unit had all of the faculty resources that were necessary to teach such a curriculum. It neatly avoided any jurisdictional dispute that might have arisen if you'd housed it exclusively in Forestry or in Agricultural Sciences, where the faculty members who were interested but were in the academic unit it wasn't housed in might have felt cut off from it. So it was adopted as a curriculum jointly administered and without any independent budget resources other than those that were voluntarily contributed by the deans of the two colleges.

The CNR curriculum was originally envisaged as designed for a maximum of 100 to 125 students; that was the scale on which it was visualized. It started off with a bang, with up to six hundred students within the first year or two because it was right at the peak of the environmental movement, and it was seen as a place where you could really study the environmental problems in a broad sort of way.

Were there six hundred students wanting to major in the--

They actually had six hundred majors.

Majors, not just taking courses.

No, no.

That's a big, big program.

Sure, in terms of the numbers of students, it was bigger than the School of Forestry, and by far a larger major than any in the College of Agricultural Sciences. Of course, it was an administrator's dream, because it built up the FTE [full-time equivalent] student workload unbelievably, and that had budgetary ramifications. But like all new curricula that meet needs, it had some immediate problems because it wasn't a conventional program. It allowed credit for certain things that weren't seen by many faculty members as altogether appropriate, and it obviously drew off budgetary resources that other people might have used for different purposes; all of the conventional problems of any new curriculum. So it was always under severe fire.

From the school and the college, or from the university?

From individual faculty members within the school and the college. The majority of the faculty gave at least grudging support to it, as evidenced by the fact that the faculty as a whole recognized it, and provided rules and regulations for it, and supervised it, and so on. But there were widespread minority views in both the school and college.
Vaux: And there was some criticism of it from across campus, too, because there were problems in administration, in the early years particularly.

Lage: Would this curriculum have had to have been approved by the CEP, or any other campuswide committee?

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Vaux: It seems to me that the faculties of the two schools were practically the final authority on these curricula, so long as the curriculum conformed to the campuswide Academic Senate regulations on admissions, degree requirements, and that sort of thing. So that once agreement of the two faculties had been achieved, then that was as high as the details of an individual curriculum needed to go in the Academic Senate hierarchy, so long as it conformed to Senate regulations governing all curricula.

Some proposals might be sent to CEP for comment to be sure they conformed or where there was a question of duplication with a curriculum from another college, but I don't think there was ever any requirement to go through CEP to get approval. I think it was pretty much in-house. But I think as the CNR curriculum developed there were some administrative criticism from the chancellor's office and the Committee on Courses of looseness in the management of courses, and this kind of thing. And a good deal of this criticism came from within the school and college faculties.

So one of the origins of the merger of the School of Forestry and the College of Agricultural Sciences was the apparent wish by many people to regularize the curriculum in the conservation of natural resources. It was somewhat anomalous to administrators and a lot of other people, too, to have the enrollment in this joint major bigger than the enrollments in the largest unit within either one of the sponsoring units. That, just on the face of it, didn't look quite right. So things had been going on looking toward trying to regularize it for some time, and there had been various surveys taken of what the faculty thought about the CNR curriculum, and what ought to be done about it, and that kind of thing.

Immediate Pressures for Reorganization: Agriculture to Davis?

Then there was a much more dynamic factor, the origin of which I am not entirely clear on—I became only aware of it after it was there, and Dean Zivmuska and Dean [E. Gorton] Linsley began to take actions to try to deal with it. That was again due to budgetary constraints. The old ongoing problem—as we've said earlier, certain problems in the
Vaux: university never go away, they just come back in new form. This was an example of one of those. There was renewed pressure to move substantial segments and budgets of the College of Agricultural Sciences to Davis.

As I recall it, these focused on agricultural economics, soil science, and possibly plant pathology. Why those three were picked, I don't know; it may have been because they were among the smaller of the departments in the college in numbers terms, or in relation to the size of the activities in those fields at Davis, something of that sort. But at any rate, Dean Linsley obviously began to feel intense pressure for those departments to be moved to Davis.

It was very difficult to resist because the undergraduate enrollments in those departments were very low. The college as a whole seemed to be all right, but it was in large part due to the fact that it had this very big enrollment in CNR, not because of the student numbers in these other departments.

I gather Dean Linsley asked Dean Zivnuska for help. The faculty in the College of Agricultural Sciences was feeling very unsettled at that time and were all—I think large numbers of them, not just those in those three departments—alarmed over the fact that the College of Ag Sciences was on its way to Davis, an outcome that they didn't wish to see happen. I think it was that threat that was the primary reason for the activity that led to merger of the school and the college.

A joint committee was formed, again by the two deans, to see what might be done to help salvage the College of Agricultural Sciences. Now, you can say, "Why was forestry interested in that?" Two basic reasons: one, the Department of Forestry within the school, and the Forest Products Lab, which also was in the school, participated in the Agricultural Experiment Station budget along with the departments in the College of Ag Sciences. From that standpoint, even though there was never any suggestion that the forestry program be moved to Davis, there's statewide competition for the Agricultural Experiment Station budget. If you dwindle the size of a campus segment of a budget, this arouses concern that that campus is losing viability vis-a-vis the other campuses in that same category.

So the question really was that a threat to the Agricultural Experiment Station budget for ag econ, soil science, and plant pathology was a threat to the Berkeley Agricultural Experiment Station budget. The more that threat became real, then the weaker the residual elements of the experiment station at Berkeley felt, even though their budgets may not have been invaded. You saw this as a handwriting on the wall of who was going to be the next to fall at Berkeley. So that was a reason for the school's involvement.
Lage: Did you need the departments at all? Did forestry draw on the departments you mentioned?

Vaux: That's the other thing I was going to say. In my opinion a very major and fundamental component of the strength of the whole forestry program at Berkeley in much teaching and research has been the strength of other departments which forestry could draw on. Agricultural economics, and soil science, and plant pathology, all three, were departments in that category. So, particularly at the graduate level, the forestry program would have been weakened by moving those departments to Davis.

So these were the reasons that the discussion of a reorganization got started. I honestly think that, for a lot of the people in the College of Agricultural Sciences, the notion of a College of Natural Resources was attractive because it seemed to provide a hope for erecting a more permanent shield against the agricultural interests of the other campuses. Agriculture was not seen as a viable entity at Berkeley in the long run, whereas natural resources could be made to seem a much more viable entity at Berkeley. So I think the support for the merger that developed rather strongly in the College of Agricultural Sciences arose largely from the perception of that as a shield.

Lage: You had mentioned at one time, maybe this isn't the place to bring it in, but some competition with biological sciences. Is that a factor?

Vaux: That's a current problem.

Lage: That wasn't a problem then?

Vaux: That wasn't a problem then, no. That's a current problem.

Differences and Divisions over the Merger of Forestry with Agriculture

Vaux: Now, from the School of Forestry standpoint, some very thoughtful and well-informed people including, I think, Dean Zivnuska—although I shouldn't put words in his mouth, but just so you can sense the situation better—I think he felt that the school ought to do everything it could to help agricultural sciences because of our reliance on these other departments, but that it was unwise for the School of Forestry and Conservation to lose its identity as a school.

Primarily because I saw the formation of the College of Natural Resources as the most viable alternative to salvage those departments, and also because I saw it as a potential way of moving forestry into a focal position in a college that was natural resource-oriented—not agricultural-oriented—which would help reemphasize these peripheral
Vaux: fields and give a broader scope to forestry—and as I've indicated, I was always interested and concerned about that—I saw the relinquishment of the School of Forestry and insertion of forestry as a department in a College of Natural Resources as being probably more beneficial than disastrous.

There were two other factors there. Obviously, the negative factor was that if forestry went into natural resources simply as a department and no longer had its own dean but reported to the dean of Natural Resources, then it was one step further removed from the chancellor's office, with some loss in effective power, therefore, and some loss, perhaps, in prestige.

I didn't weight that factor as heavily as Dean Zivnuska did, and maybe I was wrong, I don't know. But I thought it was offset by the fact that forestry had always been amongst the smallest of the professional schools. I could not see any realistic likelihood that forestry would get very much larger simply staying as a School of Forestry and Conservation. I thought that becoming a simple department in a considerably larger College of Natural Resources might actually increase the influence and role that forestry might have once the new organization got going.

So while that was one of the few subjects where Dean Zivnuska and I ever differed on academic policy, we did have different views, and I think that's essentially why. I put more weight on the future danger of forestry being perceived as so small that it got lopped off as a school anyway. I don't think he did anticipate that, and I think he put more weight on the power and influence that a dean of forestry perhaps could have than I did. These were simply differences of judgment. You historians can tell us which was right.

Lage: You can't tell me from your perspective now?

Vaux: No, I really can't. It's the kind of question that a historian could answer.

Lage: Probably down the road a bit, too.

Vaux: Well, the story may not yet be fully told. If you made the evaluation right now on the basis of what has happened since, it probably was not a good thing.

Lage: To make the change.

Vaux: To make the change. But I think that that has been a reflection of the fact that once the Dean of Forestry disappeared, nobody really wanted to make a College of Natural Resources. The agriculture people got their protection from the name, but many of the people who were there who had
Vaux: been anxious for the merger—almost merger under any terms—felt that objective had been achieved, so what's the worry about, why make any further changes?

Lage: They didn't want to go ahead and make extensive changes?

Vaux: There were substantial administrative and budgetary changes that were envisaged as necessary to bring about the objectives of the new College of Natural Resources. Once the new college was established as an administrative vehicle, a whole lot of people went back to doing business at the same old stand, and the necessary changes were not implemented.

Lage: So the whole package that you envisioned wasn't put into place?

Vaux: That's right. I think probably a number of us were just too naive and took too much on faith, or were led astray by that. Now, it remains to be seen; you mentioned the biological sciences thing, and I haven't followed it closely, but I sort of gather that, for a totally different set of reasons, some of these old issues are back up for reexamination, in the context of a controversy over the College of Biological Sciences.

If it's properly handled, I think that could give a kind of a rebirth to the College of Natural Resources in a little bit different form, but maybe a better form than was originally anticipated. Just between you and me, I'm afraid that the leadership to bring that about within the remaining people in agriculture and forestry who would really like to see a College of Natural Resources—I don't think they've marshalled the leadership yet to bring that about.

So that's why it may be premature to make a judgement about that.

Lage: Somewhere in your writings or your papers, I saw you called it "the gravest problem in the school's history." You talked about the intense division between colleagues and friends. Was this a highly emotional issue?

Vaux: Yes, I think it could be called that. Because after all, the school's history was relatively short; it was only twenty-five years. It had been remarkably stable, without divisive issues, and this one, properly, people felt very strongly about. I think the astonishing thing was that, once the issue was decided, then everybody went to work with goodwill; in forestry everybody went to work with goodwill and tried to make the most out of whatever opportunities were involved.

There were some very sharp divisions of opinion, but I don't think they resulted in personal animosities at all.

Lage: How was it finally resolved? Was it by a vote of the individual faculty?

Vaux: Yes.
Lage: So a majority of the forestry school faculty did vote for merger?

Vaux: Yes, a very large majority, actually. The significant thing was that the four or five who voted against it out of a faculty of twenty-seven or eight included some of the oldest and most experienced members of the faculty. That was the thing that disturbed me, disturbed me in the sense of, "Am I confident that my judgment is better than Zivnuska's and Dickinson's," and I think probably Cockrell, all of whom were very old and experienced hands and very dedicated to the same things I was dedicated to. They felt that the other decision would have been wiser.

I think it's fair to say there was no difference between the two groups in their objectives. There never was any difference of that sort. The question was, "Which is the best means to maintain a strong forestry component at Berkeley for as far as we can see into the future?" So it was a difference in judgment about such things as the importance of dependence on other departments, the likelihood that there would be continued erosion in those other departments that might extend elsewhere, the significance of having a dean in the school structure as distinct from being a component in a broader but still resource-oriented program. It was judgment on those kinds of questions, and those as means for maintaining a strong forestry program, rather than any fundamental difference in goals. There was never any difference in goals, I think.

Lage: One thing you mentioned, or your papers mentioned, was that part of the problem was attracting undergraduates. Was that something both the school and the college were facing?

Vaux: Yes.

Lage: Except for this conservation of natural resources program?

Vaux: By that time the conservation of natural resources thing--after all, it was under strong pressure to put itself under wraps because the documents were there showing it had been designed for 125 students. So how could it possibly justify six hundred, you see? Because there were no budgetary resources.

And that was an underlying problem; in other words, the reorganization problem had to solve the conservation of natural resource problem. A possible alternative might have been to put the conservation of natural resources program in the School of Forestry, and let more of agriculture go to Davis and absorb a few soil science people, and a land resource economist or two into the School of Forestry faculty, and so on. But the problem with that was that that didn't fit the model of a professional school, because the conservation of natural resources program was not a professional program.
Vaux: Low enrollments underlay the whole thing to a considerable degree because by that time, although forestry enrollments were still quite good, there were a lot of small enrollments scattered elsewhere in the College of Agricultural Sciences. But I think enrollment was much less of an issue then than it is today; I understand the present enrollment problem is quite severe. I guess I would point to the current problem of low enrollments as at least a short-term minor justification for my original position; I don't see how they could for long maintain an undergraduate School of Forestry with ten people enrolled as majors.

Lage: Is it that low now?

Vaux: The junior class this year I think is only about ten people. I think that low forestry enrollment is much less of a problem inside the tent of the College of Natural Resources than it would be if the school was out there isolated.

Lage: Are they still getting the larger undergraduate interest in conservation of natural resources?

Vaux: It's dwindled a lot, and they've built some new programs which have sucked off some of that. The college added a new major called "the political economy of natural resources," a new undergraduate major; that's been quite successful and I think has gradually met some of the needs that earlier on were met by the conservation of natural resources program. And then the whole dynamism that came out of the ecology movement and which contributed a lot to that has died down. I don't know what the enrollment figures are now, but I suppose CNR is about the size it was originally designed to be.

Lage: Originally, the talk was about a College of Bioresources. Do you recall that?

Vaux: Yes.

Lage: And then there was some discussion about whether that was a good name, and--

Vaux: Yes. That was a pretty clear conflict between the school and the college. The school felt that the term bioresources was meaningless. I don't think anybody in the school faculty would have accepted a merger into a College of Bioresource Sciences. I think the bioresource sciences--I'm being very crude here, but I think that was dreamed up by some of the people with the most fundamental science orientation. They knew that the campus wouldn't hold still for calling it biological sciences because there were all the biologists scattered elsewhere across the campus who would have risen up in holy horror. So they called it bioresource science as a euphemism, by putting the resource in there, it seemed to give it a little different orientation.
Vaux: I think shortly after the name bioresource science was put up for serious discussion, it began to lose ground because it was a strange name—nobody knew quite what it meant. There was no room in the concept for people with an economics or a policy interest, and there were large and strong groups of faculty members in both units with that kind of an orientation. They wouldn't accept that very willingly, so I don't think that name really ever had much going for it.

Lage: Whatever happened to nutritional sciences? I noticed that was one of the problems—fitting nutritional sciences into this natural resources framework. Did it stay within that college?

Vaux: Yes, it stayed there. Now, I'm not sure what's happened since; I think it's still there.

Lage: It probably is a program that draws students.

Vaux: Yes, it's always been one of the larger, more stable ones. But there are ongoing problems there, what to do with that, because of a relationship with the School of Public Health, for example, where there's a lot of parallel. I presume that's a continuing question in connection with the College of Biological Sciences—what happens to nutritional science, whether they can do their thing in a College of Biological Sciences, or whether they go to public health, or what. So, no problems are new, you see.

Lage: This is a little off our historical topic, but currently is there talk about establishing a College of Biological Sciences, or is it happening?

Vaux: I can't tell you that. It hasn't happened. It's under very active consideration, and there are substantial formal proposals for this, with redistribution of faculty. Indeed, the deanship of the College of Natural Resources is now vacant. The previous dean has reached the end of his term, and there's an acting dean in place. As I understand it, the new dean will not be appointed until after the question of the future of biological sciences and the College of Natural Resources is resolved, on the ground that nobody knows what the college is going to look like by the time this reorganization gets through.

Lage: Might it be the end of the College of Natural Resources?

Vaux: I don't see how it could be the end of it, no.

Lage: That's not part of the consideration?

Vaux: One formula that's been advanced—I don't think it has much popularity—is to revive the School of Forestry and Conservation in a revised mode, to take some of the people out of agriculture that don't want to go the biological sciences route.
Lage: So there are going to be some big changes.

Vaux: Presumably, but I have no idea, or no perspective, on what they might be. You'll have to talk to Lincoln Constance about that.*

Lage: Is there anything else we should say about this? I guess one thing that hasn't come out in our discussion is the role of the statewide Division of Agriculture Sciences. How did they get involved in this? Were they part of the decision-making process?

Vaux: They really weren't part of it because—well, they were, in a way. The statewide officers don't mix in academic matters. They don't have detailed campus level control over teaching budgets; that's delegated to the chancellors. So statewide would have no major reason to get into the details of the reorganization of the teaching structure. Where statewide gets in, and it's always been a complexity, is that statewide does have control over the Agricultural Experiment Station budget. So it was of concern to statewide because of the implications of this reorganization on the Agricultural Experiment Station.

That was treated in detail in the plan for the merger of the two units, so statewide must have been in there approving that in some way. My impression was that, except as they may have done so by personal communication with the two campus deans, who also wore other hats as associate directors in the Agricultural Experiment Station—-that would have been statewide's mode of intervention, and I wouldn't have perceived that as distinct from what the deans were saying.

Lage: Then this must have gone up to the chancellor's office, and even--

Vaux: Oh, it had to go to the Regents because it created a new college.

An Academic and Professional College, in Concept

Vaux: Actually, on paper—-I know this because I wrote most of the paper myself—-it's a unique college, in that if you go through the orders of the Regents that established the various colleges and schools there are academic colleges and professional colleges and schools. This is the only one that's designated by the Regents as an academic and professional college.

*Interview with Lincoln Constance in progress.
Vaux: That's a concept the educational rationale for which can be well articulated and was articulated at the time. I think it's a useful and valuable concept; I don't think it's ever been realized in the college.

Lage: Why do you say that?

Vaux: The concept of having an academic and professional college, as distinct from either an academic college or professional college goes to the question of the rather sharp difference that I see between the academic point of view—which is concerned in the main, I think, with more and more specialization, finer and finer study of narrower and narrower topics—and the professional point of view, which is integrative.

The problems you're addressing in the real world as a professional aren't narrow and specialized problems. Even though the specialized expertise has a lot to contribute to the solution of those problems, organizing that specialized expertise, and relating it to the real world problems, requires a little bit different point of view than the point of view of the specialist.

The thought was, "It's a mistake at this day and age to separate people with the academic point of view from people with a professional point of view. You've got to mix them together just as much as possible." So one of the arguments for the new college was, "This will be a place where you can get the academic point of view and the professional point of view to mix in common concern over particular problems and illuminate each other's work, rather than let each one of them burrow deeper and deeper into their own isolation."

Lage: And that's what you think hasn't really happened.

Vaux: That hasn't happened.

Lage: You haven't had that mix.

Vaux: No. Not in my opinion.

Lage: That might just be too much to fight for. Too much inertia.

Vaux: Educational institutions move slowly, and that's why I would rather leave it to you historians to judge whether this was a good idea or a bad. Today it's too late to do anything about it anyway.

Lage: What about alumni input? It seemed like there was a lot of explaining to do to a lot of the alumni.

Vaux: The forestry alumni were outraged. One of the few criticisms I would make of my—personally a very dear friend, John Zivnuska, and a very capable dean—I think he just fumbled that, and I don't know why. It
Vaux: may have been that the whole idea was just such a burden to him and he disbelieved in it, so that he couldn't bring himself to go out and defend it to the alumni. But he did a poor job of preparing the alumni for the blow.

Lage: Maybe his feelings came across, whatever he tried to do.

Vaux: I think all that was necessary—he could say he disagreed with it, but he should have at least alerted the alumni that it was coming. Then if they had disagreed with it, why, they could have jumped up and down and seen what would happen. As it was, they felt they'd been blindsided.

Lage: They didn't have much advance notice.

Vaux: Yes. So that was why there was such outrage over it.

Lage: I see. How about industry. Did they get an input?

Vaux: No, it would have only been through the alumni.

Lage: Or the Forest Products Lab?

Vaux: That really wasn't affected one way or the other because it didn't make any particular difference to the lab, I think. whether it reported to the chancellor through the Dean of Forestry or through the Dean of the College of Natural Resources. Its status really wasn't significantly changed.

Lage: Are there any other points we should make or final statements on this issue?

Vaux: I don't think there are any other points to make. I still think the effort to organize a College of Natural Resources was a worthwhile thing from the standpoint of forestry and from the standpoint of the Berkeley campus. I mean, the world's a big place, and as I see it, there is really no strong rationale for a preoccupation in Berkeley with agriculture per se. I think there's a very important rationale for the preoccupation of an urban society with natural resources, whether it's in Berkeley or elsewhere. So there ought to be a good College of Natural Resources at Berkeley, and maybe someday, why, someone can bring it about.
IX APPOINTMENT AS CHAIRMAN OF THE BOARD OF FORESTRY, 1976

[Part II, Interview 4: January 21, 1986]#

The Board under Chairman William Rosecrans

Lage: We're going to turn to the Board of Forestry today, starting back in the fifties.

Vaux: I've been looking forward to this, because I've always been very interested in the Board of Forestry, and I hope I can put something on the tape that will help people in the future to understand what some of the real problems of the board are. I don't think those are things that come out in the minutes and ordinarily get discussed, and you really only get a sharp view of them after you've been exposed to them pretty intensively.

My association with the Board of Forestry actually first began in an intensive way in 1955, and ran for ten years while I was dean of the forestry school, because at that time the dean of the forestry school was designated, strangely enough, as an honorary member of the Board of Forestry. This wasn't because of any particular honorary justification, but was a matter of practical accommodation.

The chairman of the Board of Forestry at that time, from about 1948 on for ten years, was Mr. William S. Rosecrans, a patrician gentleman from Pasadena who was very active and interested in forestry as a public service activity. His grandfather was a paymaster general in the union army in the Civil War. Upon completion of those duties, I think in the 1870s, probably, he moved to California and acquired a ranch not far from Los Angeles.

Subsequently, it turned out that General Rosecrans's ranch overlaid much of the Signal Hill oil field. As a result of that, Bill Rosecrans was a man of substantial wealth. In talking to him I got the impression that his interest in forestry arose from the fact that he felt that his
Vaux: means had come from natural resources, and that it was appropriate for him to give some service to society in relation to natural resources, and he chose forestry as the field he wanted to be active in.

So he was active not only in California forestry affairs from the time of World War II for about ten or fifteen years, but also on the national forestry scene and was president of the American Forestry Association for a number of years.

Lage: Did he have any background academically, in forestry?

Vaux: I think he was trained as a lawyer. I don't think he had any academic background in forestry per se.

Lage: Or interest in any forest companies, or anything like that?

Vaux: What his forest ownership might have been—he owned a forest property called the Yosemite Mountain Ranch, which was several thousand acres not far from Yosemite Valley. He was very interested in that property, so he had that contact, too. But he was very close to Governor Warren, who had appointed him to the board, and he ran the board in a very skillful and constructive manner.

Lage: Is he still alive?

Vaux: No, he's been gone I suppose fifteen years now. He's a recognized significant forestry figure, and I think he's included in that book of biographies of conservationists.* There've been articles in American Forest about him so his career is pretty well documented.

But one of the things that concerned him was that he thought there ought to be a close liaison between the Board of Forestry and the UC School of Forestry. There was no provision at that time in the statute for any ex officio members of the board, but there was a provision in the statute—and I don't know why it was there—that the board could appoint its own honorary members.

So Rosecrans always arranged for whoever was dean of the forestry school to be appointed as an honorary member. That appointment carried no authority whatsoever—the honorary member couldn't vote—but he could attend meetings, and the chairman of the board always gave the honorary members the courtesy of sitting with the board. Occasionally the board might ask an honorary member to do some chores that were helpful to the board, so that there was a certain quid pro quo that went on.

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Vaux: I always thought that it was a good place to show the flag for the School of Forestry in the university, and to participate as a mark of interest of the school in state forestry affairs. Also because it was a fine place to make personal contact with the people who were running the state end of the forestry business in California. So I used to attend that with a considerable degree of regularity, and just by osmosis, then, got a pretty clear picture of the structure and philosophy of that Board of Forestry and its way of operation that's worth noting in light of subsequent experience, because that was a very different board.

By statute it was pretty much dominated by the timber industry and the forest landowners. I think four of the eight members, by law, had to come from the timber industry or forest landowners. Then, there were so-called public members, but they weren't public members in the sense that we use that term today; they were representatives of particular interests, and I think were normally appointed on the nomination of particular interests. Statutorily, there had to be somebody from the agricultural industry, somebody from the livestock industry, and somebody from the water users' industry, which all in turn were essentially landowner interests. It was only the chairman of the board who was really a public member in the sense that we use today, as not having some kind of landowning interest in the forestry operation.

Lage: That was just by circumstance, I guess, that the chairman himself didn't have interests.

Vaux: The law was silent on that. The chairman may have had interests, as Mr. Rosecrans did, although I don't think that was his dominant interest in being on the Board of Forestry. I think his ranch was a recreational, pleasant place to have, but it wasn't his main source of income.

Now, that board, of course, ran a regulatory program under the original California Forest Practice Act adopted in 1945. The structure of that law was quite different from the structure of the regulatory act that came nearly thirty years later. That law I still see as an experiment in industry self-regulation. I won't go too much into this, because I hope to have an article published in Forest History that will talk about that law this spring.*

Lage: Are you going to be talking particularly about California?

Vaux: Yes. And there are some very good reasons why California adopted an industrial self-regulation scheme at that particular point in time. But they're outlined in that article, and it probably isn't worthwhile taking up space on the tape.

That law perceived of the industry as regulating itself. So that accounted for the predominance of the industry point of view on the board. The industry self-regulation notion was effective not only there, but in the structure of the rule-making process. The law provided for district technical committees which again were made up of landowners and timber operators, and they wrote the rules. Then, before they had the force of law, the rules had to be approved by the board, but the board didn't have any authority to initiate rules, or amend rules, or--

Lage: So it all started on a local--

Vaux: So it was a very much more localized level—not only more localized control, but also landowner and industry control. There was no room in this process for other interests besides the landowners and the industry to do other than make suggestions and comments. There was no effective political power resident in the system for people other than forest owners.

This came out very clearly in the deliberations of the board. As is true today, the California Forest Protective Association, which is the organization of large forest landowners and industry owners—which has been in existence for a long time—at the time I'm speaking of, their executive secretary and lobbyist was William R. Schofield, who's done an interview for the oral history project, a very interesting interview on how to be a lobbyist.

Bill Schofield was an interesting and capable man. He lived down here in Albany, and it always entertained me that he was quite a biblical scholar and used to teach Sunday School. The contrast to me between his Sunday School activities and his lobbying activities in Sacramento was always kind of interesting.

Bill Schofield would upon occasion—I've heard him do this—get up and lecture the board during a board meeting on what the board legally could and couldn't do. And the board would respond. [laughter] Which was a very different kind of aura than came later on under the revised law.

Now, the other thing that ought to be stressed here for later reference is the fact that there were district technical committees under that board that made the rules; they would make rules, approve
Vaux: them, and send them to the board. Then the board would review them, but all it could do was either approve the rules or send them back to the district technical committee for changes; the board couldn't initiate.

So the district technical committees had a very potent role in the rule-making process, and we'll want to refer back to that later on. The other thing that was important, probably, in my service on the board at that time, was the Mendocino County tax study, and I think we've talked about that from the research standpoint [see pp. 53-55]. I was appointed as chairman of the committee that made that tax study, by virtue of the fact that I was an honorary member of the board.

Politically, the review of the tax problem at that time was a highly controversial matter. It all arose because in 1926 the state adopted a constitutional amendment which was very farsighted, given the circumstances of the time, whereby land that had been cut over and more than 70 percent of the original volume of timber removed, then qualified to have the young timber that came up on the area exempt from property taxation for forty years. This was all embodied in section 12 - 3/4 of the state constitution.

I think that amendment has never been given the credit that it ought to be given for accomplishment, because other states—like Oregon, Washington, and most other states—which continued to assess the property tax on timber on cut-over land, had a very great deal of tax delinquency in the late 1920s and 1930s, which caused great instability in forest land ownership. The title to much of the cut-over land at that time passed back to the states, simply because the private owners weren't willing to pay the very nominal general property taxes that were characteristic of the time.

The record in California was totally contrasting. There was very, very little permanent tax delinquency in California in the late twenties and early thirties. I think it was manifestly largely due to the presence of this amendment. That was adopted in 1926, with this forty-year exemption. The constitutional amendment was very vague as to when the forty-year exemption expired. The language read, "For forty years, and until declared mature by a timber maturity board."

If you calculate from 1926, forty years in 1966, so by the latter part of the 1950s, early 1960s, stands that were ten-year-old timber when the amendment went into effect were beginning to get to be forty years old. Indeed, the market had changed so that some of these stands were being cut. The tax assessors saw this timber being cut, sold at a profit, and manufactured into lumber, not paying any taxes, and they got very upset.
Vaux: So the first round in this thing was a committee—again, if I recall rightly, engineered by Bill Rosecrans—where there were three tax assessors, three forest landowners, a representative of the state Board of Equalization—because they were involved in forest taxation—to study this whole matter. The temper of politics was such that no party to the controversy—either the Board of Equalization, a tax assessor, or a landowner—could serve as chairman of it; the partisans wouldn't have stood for it.

Lage: So you got the job.

Vaux: So I got the job as a neutral who had no special interest in the thing. That was a very interesting experience, the first meeting of that committee.

Lage: Was this the Mendocino County tax study, or is this broader?

Vaux: This is the same thing; the Mendocino County tax study arose out of the work of this committee, but the committee was established first. As chairman I went to the first meeting, and those people spent three hours the first day wrangling over whether there could even be a committee or not. The only accomplishment of the first day's meeting was to get grudging concurrence, yes, they'd come back for a second meeting.

So from that start we worked along and eventually identified some issues and how various issues could be handled. The Mendocino County tax study, which I did with my other hat on, as a forest economist at the university, was one of the commissions that came out of that study.

I think that's probably enough to set the stage on what I call the "old board." That was a very interesting experience and gave me some insights that were helpful later on when I became a real board member. Naturally, I terminated that service when I stopped being dean and Dean Zivnuska replaced me.

Forestry Legislation in the Seventies

Vaux: Then the other background item is the really remarkable (in my opinion) body of forestry legislation that was passed during the 1970s. The first item of that was the Professional Forester's Licensing Act, which was passed in 1971 and became effective in 1972. This, I think, was largely in response to interest on the part of a relatively small number of people in the profession who thought it would be helpful in raising professional standards to have a system of licensing.
Vaux: Francis Raymond, a former state forester, and Herbert Sampert, who was a professional forester on the university faculty, were among the principals active in promoting that legislation. I had very little to do with it beyond writing some testimony in support of the legislation, which I think outlined a rationale for the act that others hadn't paid much attention to.

This rationale rested on the fact that in various places in California statutes there are statements to the effect that the practice of forestry is in the public interest. It has always seemed to me that if the practice of forestry was in the public interest, then the public, through some structure, ought to have some concern with the qualifications of foresters. This statute, I thought, expressed that appropriately. But I had no really active role in the development of that statute.

Lage: It's interesting, though, that your rationale is sort of the rationale for the rest of the legislation that followed.

Vaux: This is all linked together; that's why I want to bring it in here as a beginning, because I think you have to look at all this as a kind of a whole complex body of stuff that fits together.

The second element was of course the Z'berg-Nejedly Act passed in 1973, becoming effective January 1, 1974. The history of the Z'berg-Nejedly Act is adequately dealt with, I'm sure, in the literature, but briefly, the timing of it was triggered by a lawsuit down on the peninsula in San Mateo County which resulted in the 1946 Forest Practice Act being declared unconstitutional.

So there was an interim from sometime in 1972 to 1974, when there was no Forest Practice Act. The Z'berg-Nejedly Act was passed to fill that statutory vacuum. It also resulted from and embodied an accumulating sense of public dissatisfaction with the old law that had been building for the preceding seven or eight years and is reflected in a number of published hearings before Assemblyman Z'berg's Committee on Natural Resources, that again are available as a background.

That thrust came primarily from the environmentalists. Then I think the case rendering the old Forest Practice Act unconstitutional simply provided a wide open door through which the environmentalists could stampede. The two key people, Z'berg and Nejedly, were the chairmen of the appropriate committees in the assembly and the senate in charge of natural resource and forestry matters.

Assemblyman Z'berg requested and funded, with funds from the legislature, a study of the forest practice regulation problem, by the Institute of Ecology in the University of California at Davis. One might have thought it might have been logical for such a study to be lodged in the School of Forestry in the university rather than the Institute of Ecology. I think clearly that reflected one of the perceptions that,
Vaux: rightly or wrongly, was abroad in the land about the School of Forestry, that it was not—perhaps trust is not the word—but the environmentalists did not think that the School of Forestry had a philosophy sympathetic to their point of view. So the Institute of Ecology, which was perceived as having a sympathetic philosophy, was asked to make the study. The Institute of Ecology had already done a lot of basic biological work and also some work at the policy level in trying to get additional protection for Lake Tahoe.

Lage: Did it have any connection with the Agricultural Experiment Station?

Vaux: No, none at all. None whatsoever. Possibly some of the lack of confidence in the School of Forestry here may have been lack of confidence in the Agricultural Experiment Station. They are kind of coterminus as far as the forestry program at the university is concerned.

Anyway, the Institute of Ecology was commissioned to do this study in '73. They, as do all good academic institutions, appointed a committee to do the study. The chairman of the committee was Bob Loomis, who was the executive of the Institute of Ecology. He was basically an ecologist. There was Geoffrey Wandesforde-Smith, who was a political scientist. There was Jack Ayer, who was a lawyer in the law school. Interestingly, the Institute of Ecology requested Ed Stone and me, of the Department of Forestry, also to be members of that committee.

So it was kind of a strange arrangement, where the Institute of Ecology was paying us to carry out this study, which if there'd been a different administrative channel, would have had to be, in effect, contributed as part of our university duties; it was a little bit anomalous.

Lage: So these studies aren't funded? When they asked the Institute of Ecology—

Vaux: Oh, yes, the Institute of Ecology had to have funds because it didn't have any budget. But if it had been done through the School of Forestry, I'm sure it could have been argued, "This is what the University of California Experiment Station is for."

Lage: I see.

Vaux: There probably would have had to be some funds, but staff, I think, would have had to be contributed by the Experiment Station.

The sixth member of the committee, who served as the secretary and executive was Bob McCulley [Robert D. McCulley], who had recently retired as director of the Pacific Southwest Forest and Range Experiment Station of the Forest Service. So, there were three foresters and three non-foresters on it, which I thought made a very workable balance. That committee came up with quite a different philosophy of regulation than had been expressed in the old Forest Practice Act.
Vaux: I think legitimately it came out of the committee as a whole, and their conversations. Rather than proposing that there be these detailed rules that governed everything that people did, this committee proposed that objectives be set up that were to be achieved at the end of a logging operation. These objectives were thought of in terms of the restocking of the area with trees, the prevention of soil erosion, the maintenance of wildlife habitat, maintenance of recreational and aesthetic opportunities, and the protection of water quality.

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Vaux: The committee envisaged that these objectives should be set out in the statute; that there be a special category of professional foresters drawn from the registered professional foresters list. It was recognized that forestry was a broad profession and not all foresters might be good timber harvest planners. So it provided for a special certification of certified forest planners that would be specially licensed.

These people would be licensed, in effect, to oversee and conduct timber harvest operations in a way that in their judgment would achieve the objectives of restocking, water quality protection, wildlife, and so on, stated in the law. The operations would then be reviewed to see whether they had accomplished these objectives on an ex post facto basis. If it was determined, in the light of this review, that the objectives had not been achieved because of lack of appropriate care by the certified forest planner, then the sanction would be against the license of the certified forest planner.

Lage: The certified forest planner would be employed by the timber operator?

Vaux: Yes.

Lage: And he would be on the hot seat to see that--

Vaux: He might be employed by the timber operator, or he might be a consultant.

Lage: But he would be the one responsible rather than the operators themselves?

Vaux: Yes. To provide for the difficulties involved in that situation, the proposal called for something called a timber harvest plan, where the certified forest planner would write a detailed plan giving the logging prescription that would achieve these objectives. The idea was that, with the timber harvest plan which the certified professional forester had proposed, you could go back on the ground when the logging was completed, and you'd have a basis for determining, if the results were not satisfactory, whether it was the forester's plan or the execution of the plan that was responsible for this.

So the concept was that if the execution was bad, then you would go after the logger. If it was the plan that was deficient, you would go after the professional forester.
Lage: But the plan wouldn't be reviewed until after--

Vaux: There was a cursory review of the plan initially to avoid getting into obvious problems, but the original plan of the Institute of Ecology didn't give the state forester any right to deny plans. The enforcement was going to be ex post facto. We on the committee thought that this was advantageous because it didn't involve creation of a large administrative framework and a whole lot of rules, and that sort of thing; the situation was so varied as you went from one tract to another tract that the judgment of the individual qualified professional was really the best thing to rely on to secure these objectives, whatever they were. This would just be a much simpler way of doing it, and furthermore it would put the responsibility for devising the proper practices on the people who were most qualified to do that, rather than doing it by fiat. I happen to think that is still a good concept.

But that's where the notion of the timber harvest plan first came from, and that was what it was designed to do. And so that link; and we'll come back to that later on.

That Institute of Ecology report outlined the proposal and put it in statutory form. Jack Ayer wrote a bill. A lot of the language that Jack Ayer wrote is now in the statute. Specifically, the intent language is, I think, almost identically what Jack Ayer wrote in that committee. Now, the details of administration were greatly changed when it got into the legislation. About the only elements of this administrative proposal for certified forest planners and timber harvest plans that remained in the act that was actually passed was the need for a timber harvest plan, but not for the purpose that was originally thought of by the Institute of Ecology committee. And the timber harvest plan had to be signed not by a certified forest planner, because there was no such thing, but by an RPF [registered professional forester]. So those two elements got into the final statute, and I think most of the language as to the intent, and so on, was what the committee came out with. The Institute of Ecology proposal was embodied in the Z'berg Bill.

Lage: Z'berg accepted it.

Vaux: Yes. The reason politically that the proposal was so strongly modified was that Nejedly had a different bill that relied on the rule-making thing. At the first hearing in the legislature on the Z'berg Bill everybody except for the environmentalists was opposed to giving the foresters this much authority and responsibility, including the foresters themselves.

Lage: Interesting. But the environmentalists accepted it.

Vaux: The environmentalists accepted it.
Lage: Despite the fact that you mentioned that they didn't have much trust in the School of Forestry.

Vaux: Well, this is fascinating to me, that at that time the environmentalists were willing to trust the foresters quite a ways; if you go by that testimony.

Lage: Do you remember specific environmentalists? John Zierold [Sierra Club representative in Sacramento] was involved in some way with this.

Vaux: I'm sure he must have been. I didn't participate in those hearings, because I'd helped write the Institute of Ecology proposal, so I'd been heard from. There wasn't much point in my going in and saying much more.

Now, there's one other feature of the Institute of Ecology's committee's work that fascinated me, that I'd like to speak to here before we move on. As we were drafting the report, the committee would meet periodically, and occasionally we met in Bob Loomis's living room up in Davis in the evenings. One evening Ed Z'berg dropped in to see how we were getting along. We had a nice discussion and tried to outline to him in principle what we were doing so he'd have some sense of it.

In the course of that discussion we'd been talking about stream protection zones and how you achieve water quality and fish habitat objectives. The thought was that the standards for adequate protection could be drawn somehow in terms of stream protection zones of one kind and another. During the course of that conversation, I said, "If you're going to put that into the bill, then in all fairness, you have got to address the taxation issue. The way things stand, you pass a statute that requires the landowner to leave timber of a positive value in the stream protection zone as a means of achieving public values, then under the tax law, the tax assessor is still going to come along and make him pay taxes on those trees that he wanted to cut but you wouldn't let him cut."

Z'berg appeared to think that that was reasonable. He said, "Write a chapter about it and put it in your report." So there's a chapter in the Institute of Ecology report that outlines various aspects of the tax problem, but particularly the tax inequities that would be developed as a result of the way the regulatory scheme was going. In my innocence, I thought, "Something about this will get into the regulatory act, even though it's not appropriate for the Institute of Ecology Committee to draft something on taxation"; that wasn't our charge.

Nothing ever happened. Nothing was ever said about taxation until the day after the Z'berg-Nejedly Act was signed into law. The very next day Ed Z'berg announced hearings on forest taxation, which was a lesson to me that you only deal with one problem at a time in a politically sensitive area.
Lage: He must have gotten some feedback on that from the timber industry, I would think.

Vaux: He may well have, although the timber industry was somewhat divided. But, as you know, that was the next forestry issue that he took up, and unfortunately he died before the forest tax law became in effect. A new forest tax law embodying a yield tax and essentially replacing this whole general property tax system, was adopted in 1975, going into effect in 1976. I think that the legislative history of the forest tax law began with the Institute of Ecology report and followed right along through, even though they're usually regarded as quite separate sorts of things.

Z'berg was still alive and following the forest tax issue in 1974, and his committee again commissioned a group at Davis—although it had no affiliation with the University of California, it was simply located at Davis—and this was something called the National Institute of Public Affairs, I think. They were commissioned by Z'berg's committee to do a study of the forest tax law.

The person who headed that study was a young man named Dean Cromwell, who was in the process of completing a Ph.D. in the Department of Economics at Berkeley, but he had not finished that degree. During his stay on the campus he had taken a master's degree in forest economics, and I had first known Dean Cromwell when he was a master's degree student.

He was hired by the National Institute of Public Affairs to direct this study on forest taxation. I was employed as a consultant on that study, so I had a little finger in that particular pie. I mention that because this is where Dean Cromwell came from in my perspective, and he will play a larger role later on when we talk about the Board of Forestry.

I think that probably lays enough of the background type of thing so that we can go on to talk now specifically about the board, unless there are points I've raised that you think need to be clarified.

Lage: No, I think that you've done a good job. I can't think of anything further.

Selection as Chairman by Governor Jerry Brown

Vaux: I don't suppose anything had ever been further from my mind than being a member of the Board of Forestry; it was just something that never occurred to me as a likely possibility. My telephone in Mulford Hall rang one day, and Lew [Lewis] Moran, who was then director of the Department of Conservation, of which forestry was a division, was on the other end of the phone.
Vaux:  I'd known Lew for a long time; he was a graduate of the School of Forestry. He said, "Would you give any thought to being chairman of the Board of Forestry?" That kind of blew my mind; I hadn't given any thought to it. I thought about it. This was in the late winter of '76, and I had made up my mind to retire from the university in '78. It seemed to me that maybe this would be kind of a fun thing to do. I'd been talking forest policy all of my life, and to have to put my feet where my mouth had been represented kind of a challenge.

Another attractive aspect of it was that I was contemplating retirement. I knew it would be a four-year appointment, I knew it was only a part-time job, so it meant part-time Board of Forestry for two years while I was still actively teaching, and then part-time Board of Forestry for another two years after I'd retired, which seemed like a nice tapering off kind of exercise.

So, kind of on that basis I went up and talked to Lew Moran about it. Claire Dedrick, who was the resources secretary, interviewed me a couple of times. I talked with Howard Nakae, who was the sitting chairman of the board, and whose term had expired, and he desperately wanted to get off the board for personal reasons. But in those days people continued to serve until their replacements were appointed.

All those interviews seemed to go well and not raise any monstrous obstacles in my mind, so my wife and I decided it would be something that would be interesting to do. I was asked to go and see Governor Jerry Brown, which I did, and that was a very interesting experience. My appointment, I think, was three o'clock in the afternoon in his office in Sacramento. I finally got in to see him at quarter past nine that evening, having been given some release time to get some dinner in the meantime. But I gathered that was not unprecedented.

Claire Dedrick went with me, and we went in to see Governor Brown. At that time, I had almost an hour of what, as far as I could tell, was his undivided attention. I never felt really bent out of shape by being kept waiting because I knew from running an office myself that if the office was run on a timely basis, then I would have had fifteen minutes, and that would have been it. I thought it was a fair exchange if I got an hour of the governor's time instead, even though I had to wait for it.

I suppose the main thing that came out of that meeting that's of some interest is that his method was simply to try to trigger me to talk with questions. As you've learned I'm an easy trigger, so out of an hour I suppose I was able to talk fifty minutes of it, and maybe he talked ten.

Lage:  What kinds of things was he interested in hearing about?

Vaux:  He wanted to know what I thought forestry needed. Ninety percent of the conversation was devoted to what I thought were the needs of forestry, prodded with an occasional question from him as to what I really meant
Vaux: and how things worked, and so on. The main thrust of my statement to him in the course of that conversation was that the main problem of forestry that now existed—-with forest licensing in the statutes, with timber harvest regulation in the statutes, with forest taxation reform taken care of—the main thing that was now needed was to try to find ways to stimulate more investment in timber growing.

I had done some studies in my work in economics that showed that only about half of the potential economically usable timber-growing capacity of the state was actually being employed, simply because the trees hadn't been planted, and the land was therefore idle. So it was half your productive land idle, and this was the kind of statement I stressed to the governor with background necessary to help him understand that problem.

I think he asked me some questions that dealt with the redwood park situation, which was, of course, very much an issue at the time. I answered those as frankly as I could. I don't remember what my detailed answers were, but they must have made clear to him that I was not a gung-ho enthusiast for the redwood national park proposal, although I recognized that something had to be done there to deal with a practical problem. I suspect those might have been the only two issues that were discussed.

Then he concluded the interview by asking me what I always thought was an interesting question. That was, "Do you think you can stand the heat?" I didn't know whether I could stand the heat, so I said, "I guess neither one of us will know unless I get a chance to try." On that we went home, and he went ahead and appointed me.

Heated Issues on the Nakae Board

Lage: In your talks with Claire Dedrick had other things come up?

Vaux: We talked about the redwood park problem some.

Lage: She's been under a lot of heat from the timber industry.

Vaux: Oh, tremendous heat. The heat from the timber industry far transcended the redwood park situation; this is important to understand, because it had a lot to do with what happened after I got on the board. See, the Z'berg-Nejedly Act became effective January 1, 1974. It always has kind of amused me since then that the Z'berg-Nejedly Act, which is widely regarded as the most restrictive regulatory act in forestry, and in some respects one of the most restrictive regulatory acts there is, was signed
Vaux: into law by Governor Ronald Reagan. And the board that sat initially, in 1974, was a Ronald Reagan board. That board, under the formula of the Z'berg-Nejedly Act, undertook this massive job of rulemaking.

Lage: Which you hadn't subscribed to on the committee of the Institute of Ecology.

Vaux: We hadn't subscribed to the principle, no, not at all. But that was the way the old law had worked, you see, so it was familiar ground to people to a considerable degree, and it was pretty much the conventional way of doing it because that's the way they did it in Oregon and Washington, and there were many precedents for that.

So the first job beginning in 1974 that the Nakae board had to do was to write the whole Forest Practice rules system from scratch. The principal resources that they had to assist them in doing that were, on the one hand, the new district technical advisory committees--and I stress the word "advisory" because these looked in many ways like the old district technical committees, but they were advisory committees. They didn't have the authority to make rules for the board's approval; they advised the board.

They had that source of input, and they had the Division of Forestry staff as a source of input. Between those two sources, they had to generate this whole set of rules. It took them essentially a year to do that, which was a massive job. The board had to meet many times a month, and I always felt sorry for them. Meantime, the old Forest Practice Act rules in general were being complied with by most of the industry, but without any enforcement.

Then in January 1975 two things happened. The new governor, Jerry Brown, came in with Claire Dedrick as his resources secretary. Almost simultaneously, a court in San Francisco handed down an opinion in the case of Natural Resources Defense Council vs. Arcata Redwood. This opinion held that forest practices regulation was subject to the constraints of the California Environmental Quality Act. That just threw things into total chaos, because the people who drew the Z'berg-Nejedly Act never had really addressed that issue.

The California Environmental Quality Act had been passed in 1969, so it was on the books and we knew it was there. But all that the California Environmental Quality Act does is establish procedures and require that certain problems be addressed; it doesn't make any action mandatory other than procedures.

Lage: Procedures for environmental review.

Vaux: Yes. I know my intuitive conception was that the Forest Practice Act actually told people what they may and may not do. That's so far beyond the procedural thing that intuitively I felt there should not be any
Vaux: conflicts. So it blew my mind when the court found that on legal ground the California Environmental Quality Act did apply to timber harvest operations.

That threw everything into total chaos because the permitting system and the rules that had been implemented by the board under the Z'berg-Nejedly Act during 1974 had not paid any attention to the constraints of the California Environmental Quality Act. Those rules had been drawn by a board entirely appointed by Governor Reagan, so that there wasn't very much environmental sympathy on that board, or in the district technical committees. So the whole system had not been very environmentally oriented.

Lage: But didn't he have some constraint? He had to draw members from different areas under the Forest Practices Act.

Vaux: Yes, but those are very broad, very broad. There was one strong environmentalist on the board, Phil Berry, who was a president of the Sierra Club at one time and has always been a very strong environmentalist. But given the structure of the board in 1974, it seemed to me Phil Berry was very much a token payment; strong as he is, he was still a token to the environmentalists because he was virtually a minority of one. The other members of the board, at least in my perception, kind of ignored Phil.

So in January '85 at the same time the new governor came in this lawsuit was handed down requiring that the terms of the California Environmental Act had to be recognized in relation to forest practice regulation. That meant that every timber harvest plan issued in 1974 as good for three years was held to be illegal.

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Vaux: That immediately created a furor and led to the march on Sacramento where the loggers all drove down and milled around the capitol with their logging trucks and so on. Two or three days after the Brown administration had taken office poor old Claire Dedrick was hung in effigy.

Lage: But she simply had nothing to do with that ruling.

Vaux: That's right, but the solution was up to her. I mean, that's the way political things go often. It is not the person responsible for posing the problem who has to bear the brunt of solving it. Claire sorted that all out in terms of something called functional equivalency. The California Environmental Quality Act had provided that the resources secretary could certify certain processes other than the normal CEQA-EIR stuff as functionally equivalent. If so, then those alternative processes would have the force of law.
Vaux: Claire decided that the approach to use was to arrive at a position where the timber harvest planning process and the forest practice rules could be certified by her as functionally equivalent to the environmental impact process. But she was not satisfied with the rules as they had been drawn by the board in 1974, and, of course, there was one new appointment to the board immediately after Governor Brown took office and then another new appointment not too long thereafter. So there was beginning to be a little bit different mix of people on the board.

So the establishment of functional equivalency meant that in order to get a set of rules that Claire Dedrick felt were adequate, the board, having just spent 1974 writing all the rules de novo, had to start back and spend all of 1975 revising those same rules.

Lage: Under Howard Nakae still.

Vaux: Under Howard Nakae still.

Lage: No wonder he wanted off the board.

Vaux: Yes, yes, no wonder. [chuckling] With Redwood Creek on top of that, too. So that was the process that had been going on and was really just completed at the end of 1975, so that when I came on the board, you'd had two sets of rules in two years. Industry people were saying, "For God's sake, leave the rules alone long enough so we can figure out where we are and what's working and what isn't working and so on."

I had continually thrown at me the charge that I was insisting on continuously tampering with the rules. Actually, we weren't; if you go back over the record, there was only one major rule revision, and that was the one that really didn't take effect until the early 1980s, the stuff that came out of the water quality, section 208 considerations.

Lage: So you didn't again have to go through and revise rules.

Vaux: In the course of seven years, we did. We made a very comprehensive revision of the rules, but that was in response to a variety of complex factors that we'll get to as we go along. But we didn't sit down to revise the rules again just because there was now a Brown majority on the board. You couldn't have done that for one thing, and there were other major political thrusts of one kind and another that were pushing for changes which turned out to add up to a major revision of the rules over the course of the time that I was on the board. But there wasn't any initial rush to go in and change everything.

All right, I guess that's enough about the atmosphere at the time of my appointment.
Lage: Let me clarify something. Was your concern with more investment in timber related at all to how the board handled the regulatory process? Or was this a completely separate function of the board?

Vaux: It's a separate function, because encouragement of investment in timber means, in part, economic incentives. The California Forest Improvement Act, which we'll say something about later on, was a direct approach to that, where there were subsidies offered and other things done to encourage investment in timber growing. The Forest Tax Reform Act, by removing financial tax obstacles to investment in timber growing, was part of that encouragement.

So in some sense they're independent things, but they're related in that many forest landowners continually complain to the board that this antagonistic, unfavorable regulatory climate was an obstacle to investment, because people never knew whether they could get their money out or not. So there's that indirect connection.

Lage: But the board's function was broader than just a regulatory one?

Vaux: Oh, the board's function was substantially broader. As a matter of fact, organizationally, the board is the policy-making body for the Department of Forestry. Roughly 90 percent of the Department of Forestry's budget is for wildland fire protection. The board is responsible for the policy for wildland fire protection on around 35 million acres of land in California.

So by some measures, that may well be the board's most important function, to make the appropriate policies for wildland fire protection. Actually politically, it was the regulatory process and things related to the regulatory process that were the source of the political pressures and why the board may often be perceived as primarily a regulatory body. But that's not the case; it has responsibility for the fire protection program; it has responsibility for the urban forestry program, responsibility for state forests, responsibility for the forest improvement program, and so on.

Lage: The time spent, it seems from the minutes, is mainly--

Vaux: The time spent, because that was both politically and--being a policy board, the real function of that policy board is to make policy, but also to put out political fires. So, in a way, the board's agenda is dictated by where the political fires are, not by what the board necessarily thinks is most important. I'll give you some examples of that as we go along.

The fact that when you read the minutes most of it seems to be concerned with regulations reflects the fact that that's where the political problems were during this period. There were some political
Vaux: problems in the fire protection area, for example, but they didn't generate the front-page news space. Because there wasn't tremendous public involvement in them, they could be handled on a much less time-consuming basis.

Personal Agenda as Board Chairman

Vaux: I think I've already indicated that my approach to the board when I went on it, in terms of expectations, was sort of personal and naive and not built out of any great understanding of what the board's real problems were. But very shortly, in the course of a couple of meetings, I got a clear sense of three or four things that any damn fool could see were needed, and those became sort of my personal agenda.

One was the relationship between the board and its several constituencies. I saw the board, given its charter, as being one that should be among other things a forum where all of the various interests concerned with forestry matters could come in and have a hearing and feel that their concerns were at least being discussed and considered, even though they might not always prevail given the situation of conflict.

The board's relations with the constituencies had not been of that kind. There were certain constituencies that felt frozen out. So one thing I wanted to do was to change that, to make people feel that the board was a place where all viewpoints on forestry problems could properly be heard.

Lage: Did you have more public hearings? Was that part of the process, or was it more complicated?

Vaux: The board had had lots of public hearings. We had more public hearings just because, given the political environment, more occasions arose where public hearings were necessary. But I'm speaking now, I think, more in terms of attitudes. The attitudes of some board members, for example, had been highly confrontational, even with people who were coming and testifying to the board. There would be confrontations between individual board members and members of the public coming to testify in the course of hearings. From that standpoint the hearing is a negative device, if the board members create the impression that they don't want to listen to people. Also, some of this reflected relationships with the DTACs [district technical advisory committees], their relationships with the public, particularly the North Coast DTAC.

As I saw what was going on there, it was that the DTACs were the very direct evolution of the old district technical committees, including many of the same people. The district technical committees were smaller,
Vaux: all made up of timber people, and the DTACs were a larger group, but the same people who had been on the old district technical committees often became the timber industry-landowner representation on the DTACs.

They were experienced and already well-organized from their previous experience, so that they tended to dominate those committees. Some public member coming in had to wait for a while before he could be heard. I think a lot of this confrontational mode and animosity between the industry and the environmentalists arose out of some quite unnecessarily restrictive actions taken by some of the DTAC chairmen—where they could have allowed people to at least air their feelings, instead they told them they couldn't speak and this kind of thing.

Lage: Did you have authority over those committees in terms of appointments?

Vaux: In terms of appointments, yes. The board makes the appointments to those committees. The disaffection between certain environmental groups and the DTACs was sufficiently great that, about 1977, a bill was introduced in the legislature to do away with the DTACs entirely. I felt that was the wrong answer, because the DTACs, if they're properly run, can be a very valuable source of input from all quarters; there's no reason why the board shouldn't take advantage of that. Later on I think it did, and that thrust to do away with the DTACs, I think, has disappeared now.

A second major item which came immediately to my attention was the internal organization and staff situation on the board. That was almost completely impossible. There had been a report prepared by a subcommittee of the Nakae board by [M.E.] Salsbury and [Henry] Trobitz, who were members of the board, recommending changes in internal organization, but the poor old Nakae board had been so busy grinding out forest practice rules, that they'd never had time to deal with this. But the groundwork had been laid by that board for internal reorganization. It was fairly quick and easy to put that into effect.

The statutes had always provided for an executive officer for the Board of Forestry, and there was budget provision for it. But a major defect was that the board had never seen fit to appoint an independent executive officer and had relied on the state forester to be the executive officer.

Why that was seen as the logical thing to do, I don't fully understand. Maybe it was just that under the 1946 board there never seemed to be any great necessity for an executive officer, so they didn't appoint one. The position was used in a variety of ways. You're probably familiar with Ray Clar's two-volume history on the Department of Forestry. Ray, who held very important administrative responsibilities in the Department of Forestry for many years, had after a while some emerging health problems where he simply couldn't carry that kind of a
Vaux: load. He was appointed executive officer to the Board of Forestry and wrote those histories, to a considerable degree, in that capacity. And at other times the budget provision for an executive officer had been used for other purposes even less related to the Board of Forestry's affairs than that.

So getting an executive officer and then reorganizing internally was a very early agenda item.

Lage: Was this partly a need to be more independent of the department?

Vaux: The board can't be independent of the department because its budget is totally lodged in the department, and so the department has control over the board's budget. There ain't no such thing as independence under those circumstances.

The difficulty was that the board is supposed to be a policy board. As I understand the philosophy of public boards and commissions in California government—and it's a kind of a unique structural arrangement in state government, I think, to have all these policy boards and commissions. There are plenty of advisory boards, but these are supposed to be independent policy boards. How do you communicate your policy views to the legislature and to the governor?

If you use a state forester as an executive officer, he's bound by his appointment as state forester to the administration's policy line. So you can't express through him any independent policy line, either to the legislature or to the governor, because his mouth is sealed. So that I think is a basic problem—not so much an independence problem, because that wasn't really basically changed, but it was a matter of a channels-of-communication problem.

If you wanted to say something to a legislative committee that was independent of what the administration's position was, there was no channel through which you could communicate. Unless the chairman went down himself and made the communication, which was sometimes done. But on an ongoing basis with a part-time chairman paid fifty dollars a day for his service when he served, you don't establish very much communication with the legislature. You need somebody who's involved with the legislature on a more ongoing basis. That was the role for the executive officer, I felt.

Lage: Was there a particular problem that caused you to see this as an immediate need?

Vaux: The whole idea struck me as illogical, and then there were other examples. Since there was no staff independent of the Department of Forestry, the Department of Forestry was serving as board staff on all forest practices regulations. So, in effect, there was no machinery for developing a board position on regulations other than the department's position. So
Vaux: the board would be accused of simply rubber-stamping the department's regulation, or simply rubber-stamping the industry's version of regulations coming out of the DTACs. There was no facility to prepare something that represented a middle ground or some kind of compromise between this. That was a drastic defect, because, to my mind, it made the board unable to carry out the role which it should have been carrying out, of trying to compromise conflicting political interests in some sort of a reasonable way.

Then a second-order complexity relates to the DTACs. By statute, a regional representative of the Department of Forestry is the secretary of each DTAC. So the DTAC would perform an exercise in rule making, recommending something to the board, with input from the regional State Department of Forestry employee, and then it would get up to the state level, and the state office of the department would advise the board something different.

The DTACs saw this as a terrible stab in the back to them. That wasn't a stab in the back, it was just a natural outcome of the defect in organizational structure. You couldn't prevent the Sacramento office of the Department of Forestry from having a different view, sometimes, from the regional office. That was causing problems because of structural improprieties, not because somebody was treating the DTACs unfairly. But these things all lead to hard feelings, you know. The surface manifestation is people going around grumbling about the Department of Forestry stabbing them in the back and this sort of thing.

A third item on my agenda was a very personal one: I don't think I'd sat down and read the forest practice rules before I got on the board. I may have read certain portions of them, but I wasn't really familiar with them. When I sat down and read what was called the silvicultural rules of the board, I was shocked, because I thought philosophically they had no relevance to silviculture or forestry.

Lage: These were the rules that had just been developed?

Vaux: Yes. They had to do with cutting methods, but there was no philosophical or terminological relationship to forestry concepts of growth and yield, and this sort of thing, that to my mind ought to have at least been recognized in something that you called silvicultural rules.

Lage: Was that from lack of input by foresters in the rule-making process?

Vaux: Foresters had made plenty of input; a lot of rules had been drawn by foresters, but I don't think they had the same philosophy quite as to what forestry really was as I had. With all due respect, I don't think many of them were accustomed to using language in such a discriminating way that you could tell the difference.
Vaux: One of the major sources of apparent inadequacy was a tendency to confuse silvicultural rules with what were logging rules. What is a clearcut? In logging terms, a clearcut may be ten thousand acres, on all of which all the trees have been stripped away. Whereas in silviculture, a clearcut is a very specific and clearly identified area of land, usually not very big, not more than twenty, twenty-five acres, that's designed with very explicit objectives to secure regeneration and a whole lot of other things.

The terminology that was used in these rules didn't recognize that kind of a distinction in any way. And there were many other points of distinction; we'll come to some examples of that, too. So I felt that the professional content of the silvicultural rules particularly, because that's where the problem became most manifest, but perhaps some of the other rules—the expression of those in forestry terms was totally inadequate.

The rules weren't doing the job that they should do, of helping to educate people as to what these forestry practices were. They were described as logging practices rather than as forestry practices; that's another way of putting it.

My final agenda item I suppose was a reflection of the first one, the relationship with constituencies. I thought there needed to be a different balance between environmental concerns and landowner concerns than had previously been dominant on the board.

Lage: More input to environmental concern?

Vaux: More output in favor of environmental concerns.

Other Brown Appointments to the Board

Lage: Did the new appointments to the board that Brown made tend to have more of an environmental outlook?

Vaux: Some did and some didn't. The first new appointment to the board was an industry member. The industry appointments had always been held either by landowners or people in management positions in large timber operating companies, people of this sort. One of the Reagan appointees whose term expired coterminously with Governor Reagan's term, and whose position therefore became vacant, was a man named William Holmes, who was both a professional forester and a president of the Soper-Wheeler Corporation. It's located at Strawberry Valley not far from Marysville.
Vaux: Bill Holmes I'd known for a long time and had a lot of respect for his competence as a forester, but he happens to be someone with very, very conservative political principles—and I use the word "principles" advisedly. He comes from a very fundamentalist position on political principles. Has no use for any kind of infringements on the rights of property owners at all, and he justifies this on philosophical grounds. But Bill and I just long ago had to agree to disagree because we were starting from totally different views of the world.

As a board member subject to replacement, when Governor Brown came into office and had to face this crisis with the timber operators coming around, Bill Holmes made some very critical and ill-advised statements to the press, charging the governor with all kinds of incompetence. So he was promptly replaced by Ray Nelson.

Ray was the executive officer for one of the timber unions in Eureka, so he of course met the criterion of being drawn from the industry in legal terms, but this, of course, outraged the traditional landowning interests.

Lage: This was a completely new input into the board.

Vaux: It was, but it nevertheless outraged a lot of people. That modified the perspective, but I don't think Ray was probably any more an environmentalist than any of the other timber members.

I'd have to check back on the other membership. When I came on the board, there were five Reagan appointees still serving. Ray Nelson was a new one. Clyde Wahrhaftig, who was a professor of geology in the university here in Berkeley, had been appointed by Governor Brown six months or more before I got there. Clyde was a very environmentally-oriented person, and he had a wonderful background for the board because he was an expert field geologist and could bring a lot of technical expertise to the board.

Cecile Rosenthal, who was probably the most single-minded environmentalist that served on the board while I was there, was appointed at just about the same time I was. I think she first served a month before I did. She was a housewife from Los Angeles who had had a lot of experience in county planning activities and this kind of thing. She was an active Sierra Club member and was a very forthright spokesman for quite a strong environmental view. With her southern California background she was also extremely helpful to the board in matters of fire protection.
X REDWOOD CREEK ON THE AGENDA: A SYMBOLIC ISSUE

Redwood National Park, Design for Disaster

Vaux: Howard Nakae asked me to lunch one day and passed on words of advice as to how one ought to run the Board of Forestry. One piece of advice that he gave me was, "Just keep Redwood Creek off the agenda, and you'll be all right." I didn't know enough at that time to realize that that was rather futile counsel.

At any rate, I first sat on the board on June 24, 1976, and the next meeting of the board was on July 22. That meeting was held at Chester by a previous decision. It turned out that the agenda at that meeting had to be given over to a discussion of Redwood Creek anew. That was a very wearing experience for me because I had never presided over anything like it. It was billed as a discussion, but essentially it was a loose public hearing with all the interested parties able to address the board on the subject. It was designed to be an effort to let people air their views and let off a little steam, and perhaps something useful might come of it.

Lage: When you say it "had to be given over"--

Vaux: Political pressure.

Lage: I see.

Vaux: There were a very limited number of things that the board could do in relation to Redwood Creek. Obviously the administration and other people were under a lot of pressure. It was the kind of situation where one of the things is to let the safety valve pop off and at least let people talk someplace where they feel they're talking to somebody who is in a position to at least listen to them and maybe react to them, rather than just beating their drums in the newspapers.
Lage: Maybe we should set the scene a little bit—or maybe you're about to do that. Tell what was happening with Redwood Creek.

Vaux: I was going to try to do that, yes. The Redwood National Park was originally set up in 1968. Whether by deliberate design or not—I can't escape the feeling that it was deliberate design on someone's part—it was a design for disaster. Because the original redwood park consisted, so far as the federal land is concerned, of a relatively small acreage of twenty thousand acres or so of largely virgin timber at the lower end of Redwood Creek around the town of Orick.

Then, south of that area, a strip was included in the park that was a quarter of a mile on each side of the bed of Redwood Creek, running from this Orick area on upstream to the so-called "World's Tallest Tree." This strip is about seven miles long. It became familiarly known as "the worm," because that's what it looked like on a map, kind of a wriggly thing that followed the stream bed up.

That land was put into federal park ownership, but the hillsides above that on either side remained in the ownership of the timber companies. The original park act gave the Secretary of the Interior authority to make agreements with the timber companies on measures needed to log those areas in ways that would protect the park, but the Secretary of the Interior never entered into any such agreements. Without knowing much about the inside of it, my view of that was that it was because the federal government was too tight to do it, or else it was deliberately too tight in order to try to force a crunch that would lead to different action.

Lage: To more park area?

Vaux: Yes. I should point out that the redwood park consists of other areas besides this. There's another area up around the Jed Smith State Park. When I talk about the redwood park, I'm talking primarily about the Redwood Creek part of the redwood park. As you know, the Redwood National Park is built around parts of two or three state parks, and the two or three state parks really include the gems, if you're interested in cathedral-like redwoods. There are some very nice old-growth redwoods in the federally-owned park, but I don't think there's any doubt that they aren't quite as magnificent as the ones that are in the state parks.

So I had never had any particular enthusiasm for the whole idea of a Redwood Creek national park. The upper end of Redwood Creek had been despoiled long before—the upper end of Redwood Creek is not redwoods, it's Douglas fir. That area had been logged in the fifties with very much less care than was being exercised in the seventies. As a result of that, and as a result of highway construction and some actual subdivision up in the northern reaches of Redwood Creek, there was just a desperate situation where the whole country was falling down into Redwood Creek.
Vaux: All that stuff over time, the debris that arrived at the bottom of the slopes, was being pushed down by each storm, and is still being pushed down, and is going to go right through the national park. That just seems to be not a very wise location.

Lage: So you think the actual choice of including Redwood Creek in the national park was a mistake?

Vaux: When I contemplate what could have been done for national parks as alternatives by the expenditure of the same amount of money, I think it's a real tragedy. As you probably know, hundreds and hundreds of millions of dollars have been spent on the Redwood National Park. A hundred years from now, I'm sure it'll be a magnificent, beautiful area, and probably people will receive proper tribute for it. But in the meantime, it seems to me it's a kind of a disaster area.

Remember that, I don't know what the figures are, but if you look at the attendance at the Redwood National Park and follow where those people go, I think you'd find that a considerable number of people will go up and see the Lady Bird Johnson Grove, but most of the people are going to go, and are going, as they did before the Redwood National Park was ever dreamed up, to Prairie Creek, to Jed Smith, and to the Del Norte Coast parks. All of those were State parks long before the Redwood National Park was bought. There isn't any doubt that the creation of the national park gave a modest stimulus to visitation in the area, and that's been of some significance to the regional economy. But in the very nature of the case, since the recreation business is highly seasonal, and particularly in redwood park, where it's not a resident recreational use, it's a kind of a transient--I mean people don't go and stay there and hike the way they do in Yosemite.

Lage: They drive through.

Vaux: It's a drive-through kind of thing. The impetus to the local economy has been modest, I would say, and far, far less than the proponents of the park were suggesting it would be. So, I have felt if somebody could have persuaded the whole redwood park issue to go away about 1966, it would have been a fortunate thing for all concerned.

I think as time goes on, its major importance may have been not the physical park itself, and again I'm talking about the part in federal ownership, but the political symbolisms that the redwood park controversy brought out. Those I think had lasting effects. In other words, the redwood park issue energized a whole lot of political action that was just waiting to be energized and had effects that had nothing to do with the question of whether redwood park was a good idea or not a good idea and the question of where it should be put.
Vaux: There was one other point I wanted to make as part of this background. Part of the background here is, "What was the Board of Forestry doing involved in this anyway?" because the Board of Forestry had absolutely no authority one way or another to determine whether there would be a park or would not be a park, and if there was going to be a park, where it would be.

The Board of Forestry probably could have made a policy statement either favoring or disfavoring a park, which would have had totally no effect, because the board had no political constituency of its own. And in the face of the uproar that was going on between the industry and the environmentalists and the Sierra Club and the North Coast Ecology Center, and all the little rump groups that emerged over that thing, whatever the board had said wouldn't have been listened to.

The reason the board was in it was because there were mechanisms which meant that all the various partisans, regardless of what their point of view, could use the board to get publicity for their point of view. The reason the board could be used was that timber harvest plans had to be approved by the state, and the companies who owned the land outside the park in Redwood Creek were engaged in logging timber on those slopes above the park, and that logging created a very incendiary atmosphere because its appearance is very destructive. So it became natural for the process of approval of those timber harvest plans to come under very close scrutiny.

Limited Board Authority to Stop Logging on Redwood Creek

Vaux: The Nakae board had been asked to declare a moratorium on timber harvest plans in the Redwood Creek area until such time as the park issue was settled. The Nakae board had refused to do that, and I think properly, because I don't think the Board of Forestry had any statutory authority to declare a moratorium on timber harvest plans. I mean, it's one thing to have regulatory authority, and it's another thing to just arbitrarily declare a complete suspension of timber cutting because somebody wants to think about a park in an area.

Now, I'll have some further footnotes to make to that observation later on, when we discuss some specifics of other aspects of this issue.

Lage: The only thing I think you perhaps didn't mention, although you implied it, was that there was legislation afoot to expand the park in these areas.

Vaux: That's a very germane point. It depends very much on what you mean by "legislation afoot." Bills had been drawn. I would have to check back on the legislative history to get the timing precise, but I think that,
Vaux: while bills had been introduced as of July 1976, which is where we first got into this, no bill had come up for hearing in the Congress. So it's a question of when you consider that a bill is being entertained. Just because a congressman introduces a bill, well, that's the first step. Can you argue from that that Congress is considering it? There's some question about that, you see. And maybe that's a pretty good place for us to stop today, because this goes on and on for quite a while.

Lage: It sounds like we've set the stage.

Vaux: Yes, we've set the stage for the Chester hearing.

July, 1976: The Chester Hearing
[Part II, Interview 5: January 28, 1986]##

Lage: Today is January 28, 1986, and we're continuing your discussion of the Board of Forestry. Last time you gave some background material on the redwood park issue, and we're about to talk about the Chester hearing.

Vaux: Yes, I think we said a little last time in introduction of the Chester hearings, and perhaps there'll be some overlap here with what we said last time. The redwood park expansion issue was a very hot political one in the summer of 1976, and despite my predecessor Howard Nakae's admonition to keep Redwood Creek off the agenda, one of the two instances that I can remember where the Brown administration brought anything that might be remotely considered pressure occurred in that first month that I was on the board.

Claire Dedrick, the resources secretary, was very anxious to have a hearing on Redwood National Park expansion. It wasn't clear exactly what the hearing was going to be about, and I think Claire Dedrick's view was that it would just be a good idea to have an occasion where interested members of the public could blow off steam to the board about the redwood park situation, and at least get the feeling that somebody was listening to them. I think that's basically what it was about.

There was no particular issue on which the hearing was focused.

Lage: It wasn't a particular timber harvest plan?

Vaux: No. Fortunately for me, the hearing was at Chester, up in the Mt. Lassen country, which was about as far away from Redwood Creek as you could get in transportation terms. So while there were a couple hundred people there, it wasn't anywhere nearly as large a hearing as it might have been.
Lage: Also far away from cities, where you're going to get your environmentalists.

Vaux: Well, it was far enough away so that there were far fewer people than there would have been had the hearing been in San Francisco or Sacramento.

Lage: Why was it in Chester?

Vaux: Because that's where the board meeting had already been scheduled. The board always had the policy, one that we followed actively during my tenure, of holding meetings around the state in the areas where people were concerned with what the board was doing. So we would usually try to have at least one meeting a year in southern California. That was in deference to (a) the great importance of southern California for the board's fire protection responsibilities and (b) recognition of the fact that two-thirds of the voters are in southern California. So we always had one meeting in southern California.

Then we would try to have at least one meeting a year somewhere in the pine region outside of Sacramento: Redding, or Chester, or Lake Tahoe, or someplace in the pine region. And always one meeting in the north coast: Ukiah, or Fort Bragg, or Eureka, or someplace where the north coast people could come in. We usually had a meeting a year down in the central coast area, in San Mateo or Santa Cruz County, or Monterey County, someplace like that. Then the rest of the meetings would be normally in Sacramento. The meeting agendas are not set until long after the date and place of meeting has been made final. Meeting dates and places have to be set long in advance in order to reserve a suitable room. The agenda has to remain open until a couple of weeks before the meeting, so it can address the current issues.

So the Chester meeting had been scheduled for some time at that location, but Redwood Creek as an agenda item had been added only a couple of weeks before the meeting. It was sort of anomalous to have a general discussion on the Redwood Creek situation because most of the people wanted to talk about whether there should or shouldn't be an expansion of the Redwood National Park, and that, of course, was something over which the Board of Forestry had no jurisdiction whatsoever. I think perhaps many of the people who came to speak at that hearing hoped that the board might adopt, depending on their point of view, a policy position one way or the other way on the substance of redwood park expansion.

In my opinion, that would have been a complete disaster, because the board had no jurisdiction. What it had to say, therefore, had no meaning, except in the sense of the symbolic issue. All it would have done was increase the polarization, in a board which already had a high degree of polarization in it, over an extraneous issue.
Vaux: So the one thing that I was concerned about was to prevent a situation arising where the board, in some sense, had to make some policy indication about the substance of the redwood park expansion.

Lage: There was plenty of precedent for that kind of thing; say, during the Vietnam war, city councils were taking positions, and--

Vaux: Sure, there's plenty of precedent for it, but that doesn't necessarily mean that it's a very useful idea. I assume that probably there are cases where it may be a useful idea, but I saw it as destructive to the board's central role, which it was having a hard enough time executing as it was, without making it more difficult by getting into other issues.

Lage: Was there any pressure from board members to do that, or was that an agreed-upon idea that they'd stay out of stating policy on the redwood park?

Vaux: I don't know. Because about that time I didn't know the board members well; we met once a month for two days and were very busy during the two days, and I just hadn't gotten a sense of whether board members felt the same way I did about this or not. The other aspect of this, and the one that I tried to use to guide the board's thinking, was that the statute says that the board makes policy with respect to forestry matters for the state, including the state's policy regarding the public lands.

So it wasn't much of a jump from making policy about public lands to making policy with respect to a Redwood Creek park because that in some sense—in a little bit different sense than had ever arisen before—was a public lands policy question. It was a question of an addition to the public lands. So the strategy that I tried to use was one of pointing to the gross inadequacy of the board's whole policy position at that particular moment.

I pointed to the fact that the board had a whole array of stated public board policies on the books, and they were in print. I think the most recent one of all those policies bore a date of about 1961 or '62, and some of them went back to 1948 and '49. They were all essentially obsolete, and yet here was an area of affairs that the board had statutory authority for.

There were many, many issues that were currently important on which the board policies were silent. There were many other issues where the board policy had become irrelevant because of the passage of time. My thrust in discussion with the board was, 'We need to do something to clear up this policy mess and get some policies on the books that are up-to-date and reflect current board thinking and are in tune with the times. We shouldn't be talking about the specifics of Redwood Creek, yes or no.' A much more germane and important issue that the board should
Vaux: take a position on was the whole question of timber supply in the state, its adequacy, what might need to be done to more appropriately recognize whatever the timber supply problems were, and the broader land-use questions that were connected with that.

Get that foundation set, then you could begin to talk about specifics of Redwood Creek or someplace else. But to just pick the Redwood Creek thing alone I thought was inappropriate. I think the members of the board accepted that as a way of proceeding, and we began to devote a great deal of time, from the Chester meeting on, to the development, first, of a timber supply policy and, subsequently, for a systematic revision of all the board policies that were on the books.

In the course of that policy development stage, we never did get to the redwood park thing. By the time we were in a position to talk about redwood park in a broader policy framework, the whole park issue was long ago moot. So it never arose.

So this discussion at Chester was essentially an airing of various aspects of public opinion. It focused, because of the nature of the testimony, on two issues that the pro-park people had picked up and were very concerned about. They were trying to get the board to recognize the importance of two things: one, so-called cumulative effects, and another, the importance of long-range planning.

The cumulative effects issue is difficult to deal with because there never has been full clarification of what cumulative effects are, in a rigorous sense. But the basic notion of it is that if you clearcut ten acres in a watershed, the effect is probably fairly minor. If you clearcut two thousand acres in the same watershed within an equally short period of time, then the effects become--

Lage: Cumulative. [laughs]

Vaux: [laughs] It's a tricky term, though, because it's argued by some that this is simply a multiplicative effect, not cumulative. Behind the notion of cumulative effects, as it's emphasized by the people who believe in this line of approach, there's some synergism involved, so it isn't just a multiplicative relationship; the effects are much more powerful, not in a multiplicative sense as you increase the area, but in some kind of exponential sense. In certain kinds of effects there may be some validity to that, I think.

**Symposium on Cumulative Effects**

Lage: Is this something that's argued among foresters? Are we talking about differences in points of view among foresters?
Vaux: The cumulative effects argument has been made most strongly by the environmentalists. Some foresters shared their view, others didn't. They have criticized the forest practice rules repeatedly for failure to deal with cumulative effects. In part as a result not just of this hearing, but subsequent concerns expressed before the board about cumulative effects, the board encouraged the School of Forestry at the University of California and the John Muir Institute--which is a research institute here in Berkeley and Napa--to mount a two-day symposium on cumulative effects. That was held here in Berkeley, oh, two or three years after this hearing, and all of the scientists and others came and talked for two days about cumulative effects.

The symposium proceedings were published. I think that symposium achieved some kind of clarification, but it was quite clear among the scientists there that a number of them were talking about somewhat different things as cumulative effects, and you had to get that sorted out before you could even begin to think about it in some kind of a regulatory framework. You can't regulate something where you're not quite sure what you're regulating. There was a lot of that involved.

The second thing that came out of the symposium was that even if you recognize that cumulative effects existed, measuring them and drawing definite conclusions about them became a very difficult thing on which totally inadequate research had yet been done. Again this is not a very solid basis for recognizing cumulative effects in a regulatory framework. They might be there, but just because they're there doesn't mean there's a basis for regulating them, which requires a certain amount of due process and this kind of thing.

Lage: Maybe this is only a layman's view, but it sounds somewhat similar to decisions the FDA has to make about dangerous substances, where there's really not sufficient evidence.

Vaux: It has a lot in common with that, that's right.

Lage: And yet when they think that there may be danger, sometimes they pull a substance off the shelves.

Vaux: Exactly, I think the analogy is fair enough if you don't carry it too far. By that, I mean that in the FDA case the stake is very often human life or human health. People, I think, react somewhat differently to that than they do in the context of non-life-threatening kinds of things, which was the situation with the cumulative effects thing. I think that puts a different sort of dimension on the discussions.

People will do things where it's clear that even though you don't know what the life-threatening dimension is, there is a life-threatening dimension there.
Lage: But the people who were really wrapped up in Redwood Creek would say that these decisions were life-threatening in a sense, to that area.

Vaux: The irreversibility argument was often made, yes. But in some sense, what you begin to talk about when there is no human life-threatening aspect involved is some comparison of alternative property values. Not that property values necessarily embrace all of the environmental thing, but as nearly as you can get a hold of it. It's a property value kind of an approach: will this particular resource be worth more, in a broad sense of value determination, not just a market sense.

Will it be worth more if it's managed this way or if it's managed that way? If those values are very difficult to judge, it's a somewhat different category of things than when the argument is, "The odds are five out of a hundred that some people are going to die if you do this." I'm not enough of a philosopher to describe exactly what the difference is, but I certainly sense it in my mind. And I don't think that anybody ever made the assertion that there was any life-threatening aspect to cumulative effects. Environmentally-threatening, yes, but that's a different thing.

Public Input, Often Irrelevant to the Board's Authority

Vaux: The second point that was a focus or discussion in the Redwood Creek thing was a so-called long-range planning issue. It was tied to cumulative effects indirectly in the sense that the pro-park enthusiasts wanted the companies to come in and outline their so-called long-range plans, which essentially were to answer the question, "How fast are you going to cut your timber over the next twenty years?" That was tied to the cumulative effects thing, quite obviously.

I think the logical but not upfront agenda there was that if you have the companies' long-term plans, then you could have a better sense of how quickly you had to do something about enlarging the redwood park before it was all cut. The companies were, of course, extremely resistant to doing anything about long-range plans, and they had an argument that was difficult for the environmentalists to deal with. Because the companies were being sued by the Department of the Interior, and the Department of the Interior attorneys had subpoenaed the companies' long-range plans, and they were part of a court proceeding, the companies were constrained by the courts from revealing this information to anybody else. So there was a lot of discussion about this.

The discussion at Chester was thus about procedural matters and essentially extraneous to the symbolic issue, and the substantive issue of what to do about the Redwood Park. So there was a lot of talk about that. In effect, nothing really substantive came out of that hearing. I think it served Claire Dedrick's purpose of having some kind of function where the administration appeared to be responsive to letting people talk to the board.
Vaux: The principal action that, as I recall it, was advocated by the pro-park people at that point was that the board declare a moratorium on any timber harvest plans in Redwood Creek. The idea was to just ban any timber harvest plans for a year and that will give Congress time to decide. A motion was made by Mr. Berry and supported by some of the other members of the board.

Mr. Berry didn't make a moratorium motion. He made a motion that would make it board policy that "No new logging plans within the Redwood Creek Basin shall be approved until the three companies operating adjacent to the national park boundaries . . . have revealed detailed, long-range plans for cutting and management of the remaining uncutover timberlands there, and public hearings on such plans have provided adequate opportunity for public review and comment. This policy shall not be operative after Jan. 31, 1977." After some manoeuvering that motion failed (tie vote) for lack of a majority.

Lage: Was this motion made with the knowledge that they were constrained from submitting the long-range plans by the court?

Vaux: There are plans and plans, and there was no intent in Mr. Berry's motion to necessarily get the plans that were in the court proceedings, but some indication of how fast the companies were going to cut.

Lage: Was Berry's intent to force a moratorium?

Vaux: I don't know his intent. He is a subtle operator.

Lage: Did you vote as chairman?

Vaux: This is an aside--I wasn't going to bring it in because it is detailed--but there was quite a bit of fussing around about that. When I went on the board I had made the statement, because it was the way I felt at the time, that I wasn't going to vote on a motion except to break a tie, or to make a tie.

Lage: Was that standard?

Vaux: I don't think it was a standard. I justified that by saying that from time to time the chairman had to represent the board to members of the public or to members of the legislature, or in other ways argue the board's position, and I didn't want to put myself in the position of having to argue for a position that I'd voted against, which at the moment I thought was logical.

Ray Nelson chewed me out about that several weeks later. He said, "You shouldn't do that. The board members ought to have the benefit of knowing where you stand on each and every issue that comes along." On this motion that Berry brought at the Chester meeting, I decided that I
had to vote on that because I could see the vote was going to be very close, and I didn't know whether it would be a tie or not a tie. Two members of the board were unable to attend the Chester meeting and one member who was present (Mr. Trobitz) abstained on the grounds of potential conflict of interest. So there were only six voting members available, and I thought I should vote. So I did vote on that.

For a number of additional months, I didn't vote on issues that weren't close. By that time I'd learned enough so that I recognized that Ray Nelson had been right originally, and from there on out I voted on all the motions.

Lage: What was your feeling on the Berry motion at the time?

Vaux: I voted against the motion to require this additional information because I didn't think it was necessarily in the statutory authority of the board to require that. I felt certain that if the board did require it, that then we'd go to court; the companies would resist it, would take us to court. I was certain that was true.

I felt to go into court over an outcome of an issue that was germane to fifty thousand acres in Redwood Creek and nowhere else—it seemed to me getting the board involved in a minute part of its total scope of affairs. It was just going to distract it terribly from other important issues that it ought to be dealing with. So that's why I voted that way.

So we all went home from Chester with nothing much having happened. I guess I'd make one other comment about it. The Chester hearing was mainly public input, because there wasn't any structured hearing process, there wasn't a proposed forest practice rule to be heard, there wasn't a proposed policy statement to be heard, it wasn't a hearing on a timber harvest plan; it was just kind of a discussion.

As a result of that, there was a great deal of public input. I just use this to illustrate something that's characteristic, to my mind, of public input in a lot of these matters. That is that there were many emotional and committed statements made on both sides of the issue of whether the Redwood Park should be expanded or not, which as far as I could see were totally irrelevant to any question the board could answer. I think that's a characteristic of public input at many of these hearings that the board holds, where—I'm not saying this across the board, but there are many people who appear and testify at those hearings who have no conception of what the issue is that's before the board.

I suppose that's characteristic of the political process in any jurisdiction, but it's just something that strikes you right away when you go through hours of a hearing and hear people testify on things that they feel very strongly, and they see as bearing on the symbolic issue, but that haven't got much to do with what the board has to consider.
Codifying the Board's Internal Procedures##

Lage: On from Chester, then.

Vaux: Then the things that happened most immediately in terms of the development of the activities of the board were the review of board policies--and there was a subcommittee set up to do that job--and the initiation of getting a board executive officer other than the state forester, which, as I said last time, had been the prevailing pattern. Those steps were initiated; they took a few months to materialize, but that was all going on.

Another thing that happened during that period was the establishment of a standing Advisory Committee on Research. The board has statutory responsibility for oversight, in some sense, of the adequacy of the research effort in the state, and so we established an advisory committee to keep advising the board on that matter.

We began to put together written procedures for the board to follow. There were certain procedures, such as for hearings, for adoption of rules, and this kind of thing, that were part of the administrative code, but there was no set of procedures for actually how the board ought to handle its business. When should the agenda be sent out, what rules of order were going to be prevailing in the actual conduct of the board's business?--just housekeeping things.

Lage: How did it strike you that this was necessary? Was it because there was more conflict the board was dealing with?

Vaux: My experience in the Academic Senate, of course, had ingrained me with a sense that, first of all, how you do things is important to avoid challenge. Because if you're going to be challenged, one of the first things an attorney does is look at how you did the thing, and if they find some procedure there that they can claim is not in accordance with law, then the whole output is useless, and you've got to do it all over again. I learned that lesson in the Academic Senate.
Vaux: I also had learned in the Academic Senate that well-defined procedures are almost essential to keep conflict from getting out of hand. So I felt very insecure about the internal board discussion in the absence of any established order of procedure that could give the chairman some kind of control over what was going on, and to keep emotional issues from getting totally out of hand simply because you didn't have a standard routine of procedure to follow.

So that had been on my mind. It also had been the recommendation of the earlier board's own subcommittee report, the Salsbury-Trobitz committee, that I think I mentioned last time. But I think the board just had been so busy making rules that it hadn't had time to codify its internal procedures and bring order out of them.

Likewise, looking toward bringing in an executive officer required some documentation of what his role was, what his authority was, what his relationship to the Department of Forestry was, and all that sort of thing, which simply didn't exist at that time. So I think those were the reasons that there was a lot of attention to these internal organizational matters.

**Instituting the Subcommittee System, Developing the Timber Supply Policy**

Vaux: We started at that time, informally, to begin to do quite a lot of work by board subcommittees. Up to that time, much of the work was done by the board as a whole, rather than having subcommittee study of some things ahead of time just to kind of resolve issues, and focus them, and so on. That was a very time-consuming way to do things; the subcommittees saved a lot of board time.

So we started out informally. There was a subcommittee on the timber supply policy, and subcommittees on this, that, and the other thing. Then, subsequently, we standardized this with three or four standing subcommittees, to which most business was referred as a routine matter. I think that saved a lot of time and enabled the board to give more thought to certain issues than otherwise would have been the case because some of the weeding out, formulation of questions, and so on, which is very hard for nine people to do collectively, could be done by three or four.

Those subcommittees were carefully structured so that they were balanced, in the sense that there was representation from both the environmental wing of the board and the industry wing of the board on every subcommittee. This let the issues become clear in the subcommittee discussions and then brought back to the board in the form of a report.
Vaux: So that was all going on during the fall. And the timber supply policy subcommittee had developed a policy statement, which then came up for public hearing. It took another six months to get it actually adopted because there was much argument over the details of that. What started out as a fairly simple, two-page statement that I thought covered the subject reasonably well, eventually ended up to be about a five- or six-page statement, because everybody wanted to throw in everything but the kitchen sink.

Lage: Was every statement seen to have a kind of political ramification?

Vaux: Sure. I mean, people saw bogeymen under the bed in every sentence virtually, and of course the bogeymen were different depending on who was looking under the bed.

Agreement on Intent Language of the Forest Practice Act

Vaux: One important thing came out of that January 1977 meeting. There was discussion about the intent language of the act; I think it's section 4512, or 4513, somewhere along in there, in the Natural Resources Code, which is the intent language of the Forest Practice Act. It's very broad; it says the purpose of the act is to maintain a continuous supply of timber for the use of the people of the state, with due consideration for a listed array of other values that's quite numerous: soil protection, wildlife habitat, watershed protection, recreation, aesthetics; a number of things are listed.

It's quite an eloquent statement. Jack Ayer wrote it in that Institute of Ecology report. I always thought it was a very good statement, for statutory language. But it was very vague, because what did "due consideration" mean? During the January meeting, we heard from Fred Landenberger, the person who usually represented the California Forest Protective Association before the board, and a very capable person. The board was discussing possible testimony to a legislative committee regarding clarification of the intent language. Mr. Landenberger gave the board his perception of what this intent language was all about. He made that statement, and Mr. Berry said, "Now, wait a minute Fred; I'm astonished, because if I heard you aright--" and I'm paraphrasing, now, what Phil Berry said, obviously. "If I heard you aright, I can almost agree with you in what you just said."

I was thunderstruck, and I thought, "My God, if we've got Fred Landenberger and Phil Berry agreeing on something that has to do with the intent language, we'd better doggone well get it on paper. So we took this, and had considerable discussion of it, and ended up with a simple resolution that the board adopted, stating that its understanding
Vaux: of the intent language was that primary and coequal consideration should be given to the maximum productivity of timber land, to prevention of soil erosion, and to the maintenance of water quality. A somewhat lesser level of priority, but still protection, should be given to wildlife and fishery resources and to range and forage. A third level of priority stated in the resolution was "to give consideration" to recreation and aesthetics. The resolution's in the minutes (#77-1-6, Board Minutes 1/17/77) and we can dig it up. But anyway, there's a three-tiered structure of a hierarchy of values. That resolution passed the board eight to nothing. I abstained for reasons previously mentioned. There was a high degree of unanimity among that diverse board on the existence of that kind of hierarchy of values, which I felt was both interesting and valuable.

I think that kind of structure of values guided the entire board throughout my tenure on it. Now, in any given case, again, there's a lot of room for differences in judgment about it, but it was very helpful to get that. Particularly when section 208 came along later on, because the board was unanimously on the record as supporting the importance of maintenance of water quality as coequal with timber production. So there was no argument in the 208 discussions over the relative importance of these things. There was plenty of argument over what you needed to do in order to give those equal value, but the goal was clear. So I think that was a very, very important vote.

Significance of Hiring Executive Officer Dean Cromwell

Vaux: In April of 1977, Dean Cromwell (I think I've spoken about him earlier on so I don't need to repeat his background) was elected executive officer, and he took office very shortly after that. That, of course, had a lot of internal significance for the board and ongoing significance in a lot of ways.

It gave the board not only a staff independent of responsibilities to the Department of Forestry, but a staff member with quite a different point of view and different set of contacts. In other words, Dean Cromwell had worked extensively with the legislators, and he knew the legislators. Not that the people in the State Forester's office didn't know them, but their relationship to those legislators was entirely different. They were administrators against the legislator, whereas Dean Cromwell came out of a background from the legislative point of view itself. (He had served previously, formally or informally, as staff to legislators.)

So that was important, not only in terms of point of view, but also in terms of giving us some channels to legislative people and legislative staffs that the board hadn't had readily available before. And giving us
Vaux: a full-time person in Sacramento who could, in effect, while he didn't have policy delegation, he could do an awful lot of spade work in Sacramento that otherwise only the chairman could have done, and the chairman didn't have time as a part-time appointee. So I think that was a very significant development.

Lage: You must have been in quite close contact with him.

Vaux: Oh, I was in detailed contact with him all the time. I mean, we would be back and forth on the telephone two or three times a week, often.

Genesis of the Forest Resources Assessment and Policy Act, 1977

Vaux: During this period, also, something was going on at the legislative level, a couple of things, and I should mention them. Before Dean Cromwell was appointed as executive officer, he had still been functioning as staff person to various legislators in one way or another. He called me on the telephone one day, and said, "Barry Keene needs a new forestry bill for this session of the legislature. What shall we give him?" [chuckling]

I was kind of thunderstruck at that, because I didn't realize legislation emerged out of that sort of informal context. I was a little at a loss to make any suggestion because the licensing act was in place, the regulatory act was in place, the Forest Taxation Reform Act was in place, and that had been quite a load of new legislation in only a five-year period--three major laws. I didn't have any clear sense of what else was needed and told Dean that.

He said, "How about a state RPA [Resources Planning Act]?" The RPA [1974] was a piece of federal legislation which had been drafted largely by Senator Hubert Humphrey and set in motion a fantastically involved process of planning and policy making for the national forest system of federal land. Dean's suggestion was that a bill be introduced that would institute a somewhat similar state level of planning, because the federal RPA was mainly concerned, although not exclusively, with the national forests.

So it would make sense to have something on the state level that would articulate with that. Indeed, the federal RPA provided for state input to the RPA planning process, and it was difficult to see how the state could make sensible input to the federal RPA process if it didn't have some planning process of its own going on at the state level to give it information and viewpoint.

So that made a lot of sense to me, and I said, "Why don't you go ahead?" So Dean wrote a bill, and I reviewed it. Dean gave it to Barry Keene, and it just went on through. There was practically no opposition.
Vaux: There were a couple of points of opposition that I'll mention later. That became the Forest Resources Assessment and Policy Act of 1977. It went into effect in '78.

Lage: Was that to be administered by the forestry board?

Vaux: By the Department of Forestry. Well, there were two minor points that came up in the legislature where there was opposition to the law. One was that the law was copied almost verbatim from the federal act, with logical changes in words, with the Board of Forestry lodged in the locus of the Forest Service so far as the state statute was concerned, and with the Board of Forestry doing the policy things that the Forest Service did under the federal act, and with the department of Forestry doing the administrative and planning things that the Forest Service did under the federal act.

One problem that came up was that the federal RPA involves forest and range lands. Without any indication that we should do otherwise, the forest and range lands were included in the original draft of the FRAPA bill. Immediately the livestock men objected to it, apparently because they were afraid that--although this was simply a planning and policy law--it was going to give the Board of Forestry some kind of devious access to constraining the livestock industry.

All that happened there was that the range land thing was dropped out, and the language just read "forests." As soon as the law went into effect, then the livestock people changed their minds, and two or three years later, at their instigation, the law was changed to go back and include the range lands.

Lage: But still with the same jurisdiction under the Department of Forestry?

Vaux: Yes. The other hitch in it could have been more serious, in the sense that in looking over the bill's language we hadn't thought about it as carefully as we should, because, as I've said, this whole thing just sort of came up off the cuff, without the depth of study that the Institute of Ecology had done on the regulatory law, and the study that had been done on the Forest Taxation Law; with all this background assembled, the approach of Dean Cromwell calling up and saying, "Barry needs a bill," [laughter] was a little informal. I never could take the thing all that seriously, and we just hadn't thought about some of these things.

The hitch that developed was that, after the bill was on the floor of the legislature and was about to be passed, Claire Dedrick was replaced as resources secretary by Huey Johnson. Huey Johnson took a look at the bill and blew his stack because the federal law had said that the Forest Service, as the ultimate outcome of the RPA planning process, should develop a program for forestry. We had followed this language, and said that the Board of Forestry should develop a program for forestry.
Vaux: Huey was about to run down to the legislature and oppose it because he said that program was a function of the administration, not of the Board of Forestry. Of course, he was dead right. It was just something that we'd been too careless to pick up. Dean, by that time, was executive officer of the board, and he quick ran over and stuck in an amendment whereby all the board did was issue a policy statement on the basis of the FRAPA report, and the programming was left to the administration.

Once that was untangled, then the bill passed without any further opposition. To my mind, I think the Department of Forestry, after some trouble in getting started, as anybody would have with something that comprehensive, has done an increasingly valuable job in doing that forest resource assessment program. It's a real strength of the department now, I think.

Lage: I assume they were given some extra money.

Vaux: They were given $300,000. When you consider the scope of forestry operations in the state, you're talking essentially about the planning of a third of the surface of the state; $300,000 a year doesn't seem like too much to spend.

Lage: Has it had an effect?

Vaux: Oh, I think it's now beginning to have an increasingly significant effect.

Lage: Did it cover private lands, too?

Vaux: It focuses primarily on private lands. That was the purpose of it because the federal planning process, while it talks about private lands in the sense of those congressionally authorized private programs—federal cooperative programs like fire protection and assistance money to small landowners, and insect and disease control and so on—the sort of nub of private land management isn't touched by federal policy. So the focus of the FRAPA was on the state's concern with the appropriate management of private forest lands.

Lage: Did the things that developed through FRAPA affect, then, Board of Forestry decisions, timber harvest plan decisions?

Vaux: Yes. Maybe not so much timber harvest plan decisions, because FRAPA develops more of the broad, general, fundamental policy-oriented information that underlies the state forest policy, not the details of a particular local timber harvest plan that may involve only fifty acres or twenty acres. It's a difference in scope of view. So I think it was more important for such things as forest taxation, timber supply in the general sense of the word, problems of different categories of land ownership, this sort of thing.

FRAPA was passed in the fall of '77, although working out these bugs in it took place in the spring and summer.
More Redwood Creek Heat: The May 1977 Hearing

Vaux: In May of 1977, we come back to Redwood Creek. There's quite a lot to say about that.

Lage: I assume not too much was happening with the redwood issue after the Chester hearing.

Vaux: Well, a lot was happening in the redwood issue, but not at the Board of Forestry. As I said, the board really had no concern with Redwood Creek, except through timber harvest planning. Following the Chester hearing, while there was grumbling and discussion going on, nothing happened in the timber harvest planning aspect of Redwood Creek to bring it to the attention of the board.

There was a lot happening at the congressional level, which was where the action was and should have been: in the sense that bills were introduced, and those were going through hearing, and that sort of thing.

Lage: Did timber harvest plans come before the board during that period?

Vaux: No, because the director approved timber harvest plans during that period, and this was a continual source of irritation to the pro-park expansion people. But so long as the director [of the Department of Forestry] was approving plans, there was no occasion for the board to look into the situation.

Lage: If the director approved a plan that the board disagreed with, could the board bring it up?

Vaux: The board had no authority to bring that up. In other words, the law makes the decision to approve or disapprove a timber harvest plan, in accordance with the rules of the board, a function of the director.

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Vaux: Once the director makes a decision on a timber harvest plan--to approve or to disapprove, or to conform or not to conform the plan, as the term goes--that's the key decision-making point. Any subsequent action on the plan is appellant in nature. There are two kinds of appeals that are involved, but they're not symmetrical.

If a plan is denied by the director, the landowner or the timber operator, whoever is requesting the plan, can appeal that to the board. The board then holds a hearing on the plan, not on the director's decision, but on the plan, and the board makes a determination on whether the plan should be approved or not approved.
Vaux: If the director approves the plan, there was until recently no statutory authority for anyone who didn't like the plan to appeal the director's approval to the board. It was not symmetrical. So the appeal from an approval of a plan had to be to the court, to get a restraining order against the director from approving the plan.

All during the summer and fall of 1976, and earlier even, the Resources Agency, the Division of Forestry (as it was then), the Park Service, the landowners, with all kinds of lawyers including the state attorney general's office, and the US Attorney General's office, and the Natural Resources Defense Council looking over their shoulder every step of the way, had been involved in trying to develop special procedures for the review of timber harvest plans in Redwood Creek. Actually many of these procedures were used informally in review of Redwood Creek timber harvest plans but many environmentalists wanted rules requiring these procedures.

Those timber harvest plans were probably more closely scrutinized than any other timber harvest plans that have ever been written. I think there was more danger to environmental values from people stomping over the ground in the course of determining whether the plans could be approved or not, than--that's an exaggeration, but it illustrates the point, that the intensiveness of the discussion and information exchange was unprecedented. All that was going on and was kind of the holding action that was being mounted, and so the processing of plans was extremely slow and not very many of them came along.

Until the spring of 1977, the director had, in fact, approved all the plans that had made their way through that maze of special procedures that had been developed.

Lage: Was Lew Moran still the director?

Vaux: Yes. Review teams had been developed as a device for meeting the requirements of CEQA. Even though there was no statutory requirements for them, they were used in fact in those Redwood Creek plans. It wasn't until April or March--I'm not sure about the precise dates but along in that period--with legislation at the federal level to establish the park now at the committee hearing level--not just introduced, but at the level of committee hearings--that Lew Moran denied the first Redwood Creek plans.

There were three of them, two Louisiana Pacific plans, and one Arcata Redwood plan, which were denied at about the same time. The companies, in line with their rights under the law, appealed those denials to the board. So everything was set up for a hearing on May 12 or 13, 1977, I've forgotten which, on appeal of the denial of the Redwood Creek plans. That was quite an affair.
Attorney General Younger's Legal Opinion

Vaux: Now, there was some preliminary action. We had seen the question coming down the road, we knew the plans had been denied, we knew they'd be appealed. In expectation of that, I had written a letter to the attorney general, Mr. [Evelle] Younger, asking him two or three specific questions that had to do with the board's authority to deny these plans. The questions were thought out rather carefully, and were quite specific as to what the limits on the board's authority might be.

Lage: Were the questions regarding how you should consider the pending legislation?

Vaux: No, it had nothing to do with the legislation; they had to do with the board's authority and the director's authority to deny timber harvest plans, and what kinds of considerations could be taken into account in arriving at that determination. If you want to have access to the letter, I can dig it up from somewhere, I'm sure it's around. But I'm sure that also it's a matter of record in the attorney general's office and the Board of Forestry office, and elsewhere.

Now, that letter will come back into the story. I had written the attorney general perhaps four or five weeks before this hearing asking these questions. When the date of the hearing was set, I wrote again asking for a response so I could have it before the hearing. Also, as you have noted in the outline, Governor Jerry Brown was never particularly aggressive in replacing members of the board when their terms expired. So we had two people who were still Reagan appointees—-we had more than two people who were still Reagan appointees—but two people who were Reagan appointees whose terms had expired a considerable time before, but they stayed on.

They were replaced in time for this hearing.

Lage: That means you had to write to Brown? It seems to me in the records somewhere, you had to--

Vaux: I think maybe I wrote a letter to him once just calling attention to it. Mrs. [Virginia] Harwood came on as an industry representative, and David Pesonen was appointed as a public member. This hearing on Redwood Creek was their first participation in the board's activities, so that was something new, for all the rest to get acquainted with them, and--

Lage: How did Mrs. Harwood represent timber? What had been her connection?

Vaux: Mr. and Mrs. Harwood, as I understand it, have a partnership. There's a Harwood Forest Products located at Branscom; it's a joint enterprise of some kind between the two of them. She was an active participant in
Vaux: running that business and in their land ownership activities, which extended beyond just forestry. At that time they owned a couple of ranches up in Mendocino County, and that sort of thing. I think they were both quite active in Democratic politics and had been supportive of Governor Brown.

Now, this hearing was a very long and wearing process. It ran from about a quarter of nine in the morning until ten-thirty that night, so everybody was just ragged by the time it was over.

Lage: Was this Sacramento?

Vaux: In Sacramento, yes. And there was quite a crowd there; we had to get a special room to provide room for everybody to be there. I was concerned because we'd had a couple of appeal hearings before, so I'd had a chance to get a little bit familiar with the appropriate procedures for these hearings. The more familiar I got with them, the more confusing they seemed to me to be.

We had a very good man from the attorney general's office to guide us in these matters, Mr. Robert Connett, and he'd had a long experience with the board. But he had a way that many good lawyers have when you ask what you thought was a straight question, and you get back something that is very, very hard to understand as an answer to the question, sometimes. That's not a criticism of him, it's a question, as I understand it, that a lot of times the law isn't clear, and an attorney isn't going to stick his neck out and say, "Yes, this is it," when the law doesn't say so.

There was a lot of this in hearing cases, in that the statute just wasn't very clear on who did what to whom in the course of a hearing. The one thing that Connett made perfectly clear was that the law gave the chairman a lot of discretion as to how the hearing should be run. That placed me under some pressure to try to run it in a way that would not be subject to too much challenge subsequently.

So this matter of the procedures was lurking in the background all the time, to be sure that everybody was given due opportunity to have their say, but nobody was given an opportunity to say too much. [chuckling]

Lage: Or you would have been there two days from 8:45 a.m.

Vaux: The question of the time duration really wasn't germane, no. The question was that now this was a legal proceeding. We knew that whatever the board found, it was going to be contested in a higher court. So unless the proceedings were justifiable in terms of the statute that outlined those proceedings, that would be the first ground on which somebody would throw out whatever decision the board had made.

Everybody, on both sides, I think, was anxious that proper procedures were followed. You never want to have stuff thrown out on procedural grounds if you're trying to defend the position of the board because that
just means you haven't done your homework properly, or you've committed a procedural boner which doesn't reflect well on the board at all, regardless of what substantive answer you came out with on the issue of redwood park.

You had several attorneys on the board, as well. Did having attorneys on the board present any special--

We had two attorneys on the board, and we had another attorney serving the board, a representative of the attorney general's office. In general, Mr. Berry and Mr. Pesonen, I thought, showed quite a bit of restraint in that they didn't attempt to practice law as well as being on the board. I mean, they brought legal backgrounds, which, in the main, I think, were helpful.

Occasionally, it got difficult to follow some of the discussions about legal matters between those people and the attorney general, but I was never aware that they were trying to second guess the attorney general, who was our legal counsel. Pesonen and Berry were always careful, I think, to observe and to stress that they were not the board's legal counsel. In many cases, in drafting findings and things of that sort, which have to go along as part of the legal process, they were very helpful because of their legal knowledge.

Now, I mentioned the letter I had written to Attorney General Younger. As I went to the hearing at eight o'clock that morning, I still hadn't received a response to my inquiry. I got to the hearing room, and shortly after I arrived and just before I was going to convene the hearing, a representative of the attorney general's office handed me the attorney general's response.

I quickly read it, and fortunately I was enough awake to realize that in some subtle way the attorney general had changed the question. While the thrust of his opinion, as I read it, was that the board didn't have the authority to deny these plans, the question that the attorney general responded to, and which he put into the letter, was a different one from the one I had asked.

That's not an uncommon thing; lawyers will often rephrase questions that are asked of them. But nevertheless, the question, for whatever reason, had been modified slightly. And because of that, I thought that the answer really wasn't responsive to the question I had asked.

Can you remember how it was modified?

Again, I would have to dig out those letters and get that. If you want to incorporate something, I can dig them out. They're upstairs in an old wine barrel someplace.
Vaux: The attorney general's letter in effect said the board didn't have the authority to do this, regardless of--

Lage: To deny--

Vaux: To deny the plan. But he said that in the context of answering a question that I thought was different from the one I'd asked him.

Lage: Was he also saying that the director didn't have the authority to deny the plan?

Vaux: Yes, sure, because the board hearing was supposed to be on the basis that the director had used to deny the plan.

The next interesting thing to emerge was that the legal justification that the appellate companies then presented to the board as their case for why the board should overrule the director was couched almost entirely in the language of the attorney general's opinion. I have no evidence one way or another, but I just couldn't escape the feeling that perhaps the attorneys for the companies might have seen a draft of the attorney general's letter before I saw it. And there'll be some follow-on to this subsequently.

The other interesting, highly entertaining aspect of the hearing was that the existence of the letter--let me back off a moment. The unusual nature of this hearing process is indicated by the fact that the attorney general's office provides the attorney for the director, who is one party to the case opposite the companies, and the attorney general's office provides the legal counsel to the board that's sitting in the role of the judge. They are two different [assistant] attorney generals, but they come out of the same office and so presumably are guided by the same policy viewpoint.

In addition, in light of the attorney general's letter to me, the [assistant] attorney general presenting Lew Moran's case, as director, was precluded from giving him any legal defense whatsoever. The attorney general's letter already implied what the director had done was illegal.

Lage: That's very interesting.

Vaux: So what happened was a fascinating thing. Usually in appeal hearings, the director will argue the forestry and substantive-fact aspects of the case, and the procedures that he followed, and the attorney general's deputy will provide the legal justification. Instead of that they turned it around, and the attorney general's representative gave the forestry and administrative aspect of it, and Lew Moran gave the legal defense. [laughter] Which is kind of an interesting way to handle the problem. It's too bad somebody didn't get Lew Moran's reaction to having to be his own lawyer on that occasion.
Vaux: Those are just some of the backgrounds that some historian might be interested in someday, on that case.

Lage: Did that letter from the attorney general affect how you went ahead and proceeded?

Vaux: I distributed copies of it to all members of the board, of course. For my own part, I decided to ignore it. Now, it obviously affected how the attorneys for the companies proceeded because they relied heavily on that.

Lage: Was it then also a matter of public record? Were they referring to the letter to you at all, except for the fact that their arguments were couched in those terms?

Vaux: As soon as the letter was delivered to me, it became a matter of public record, so they had access to it at that point. The only thing that to me seemed a little bit extraordinary was that I still hadn't had time to read and digest the letter myself when they presented their case in terms that alluded to arguments and language used in the attorney general's letter. I couldn't exactly visualize them getting it in there in such depth within the time constraints that had limited me.

Upholding the Denial of Timber Harvest Plans in Redwood Creek

Vaux: The upshot of it all was that it came to a vote, and the vote I think was much less close than most people expected. It was, in fact, on two of the plans a six-to-three vote, and on one of the plans a five-to-four vote to deny the plans. I was the one person who did not vote the same on all three of the plans, and I don't think anybody ever understood why that was. I think they probably thought I was confused, or else was trying to waffle in some strange way, and that wasn't the way I saw it at all.

But as I saw the gist of the case, it goes back to this intent language that we've talked about earlier today, where the board has to give due consideration to recreational values in comparison to timber values. Well, the timber values were clear, and there has been a lot of testimony on that. The recreational values, as I saw it, were potential, and they were potential in two senses.

One, what is the value of a national park in being? That's a very difficult thing to estimate in some sense, to say nothing of an addition to a national park. The other thing was, what was the potential that Congress was going to act to create an addition to the national
Vaux: park? At that time we didn't know that. We had a barrage of telegrams and letters from interested congressmen and senators who were supporting the park addition, but that was no guarantee that a park bill was going to come out.

So I felt what one had to balance, in terms of the Forest Practice Act and its intent language, was the potential recreational value added by the park addition against the value loss of the timber, both looked at in a broad societal context. The difference in my vote was simply a reflection of a subjective assessment that two of these plans were in the area that Congress was very likely to include in the park, and the other one was considerably more remote and seemed to me was outside any area that Congress was likely to include in an expansion. So, in a specific evaluation comparison, the three plans were not identical.

Lage: Did those points come up in the hearing?

Vaux: No, I think I made a brief statement at the time I voted. The plans were voted on one at a time. The key vote was on one plan, which was the one most likely to be included. I think in making that vote I made a very brief one- or two-sentence statement about balancing these values, and that's why I felt it should be done.

It wasn't the total timber value against the total park value. That's not it; it's the value of these particular twenty acres as timber versus the value of these particular twenty acres as part of a potential park. Of course, the timber value wasn't the market value of the timber, it was only the loss to the companies of having to wait for six or eight months before they cut the timber. Which was not a particularly tremendous sum, although the value of the standing timber itself was very, very large.

So it was kind of a narrow little question. But the symbolism that overrode that was very heavy. Because if you voted to deny the plan, you were for the park, and if you voted to approve the plan, you were against that park, in symbolic terms. I thought it was a little ironical, because as I said earlier on in a different context, I was never a very strong advocate—in fact, somewhat less than an advocate—of the Redwood National Park, or of the addition to it. Yet when I voted to deny that first plan, I was immediately perceived as a "good guy" in the eyes of everybody who was supporting the park, which was probably not a fair evaluation at all.

Lage: Well, you were setting aside your own personal views of the park and listening to the intent of Congress.

Vaux: I didn't think the board's personal views about the park had anything to do with it. But most people don't see those things in that perspective, I don't think. That has a bearing on my feelings about public input to
Vaux: governmental processes of one kind and another. That, sure, you have to have public input, and it's important. But the public that's making the input doesn't always perceive the limits of the jurisdiction that's involved.

Lage: Do you think that the decision that was made reflected a change in the board's point of view, the board's composition? Or a change in what was happening with Congress? Or was it not related to either one?

Vaux: I think it was related to all these things. The argument that "the board ought to do something" was greatly strengthened by the fact that the bills in Congress had progressed to the hearing stage, and had already--in the case of one house, I think--had a favorable subcommittee report on one or more of the bills. The process was moving ahead politically, and so the probability that the park would be enlarged in some way was much greater than it had been earlier on.

So if you're using this tidy little valuation formula that I've tried to define, then the recreational value was going up as the probability of favorable Congressional action increased.

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Vaux: Let's restate it this way: if the Chester hearing had been an appeal hearing instead of a discussion, the likelihood that a redwood park expansion proposal would be adopted by Congress would have seemed much less at Chester in July, 1976, than it did at Sacramento the following May, because of the intervening congressional action. Because the recreational value was probabilistic, Congress had greatly increased that value over the interim.

If one had been making a judgment of these values back at the time of Chester, one might well have argued the other way, in my perspective.

Lage: You also had different board members that Brown appointed.

Vaux: Yes, Jerry Brown left nothing to chance and appointed Harwood and Pesonen. Harwood actually voted to approve the plans, supporting the industry's position. But Pesonen voted to deny the plans. There was another member who had been appointed before they were, Dwight May, who was the livestock representative. Dwight May was a man with very strong environmental concerns, and served on the coastal commission, and this kind of thing. So the votes could have been pretty well counted beforehand, as five to three--ignoring me. I think most people probably didn't know how I was going to vote. I don't think I knew how I was going to vote either until I got there and listened to all the discussions.

That's part of the beginning of the Redwood Creek involvement. There's some more to come on that, but we may as well go on. Maybe I'd better move ahead and finish the aftermath of the Redwood Creek hearing.
Vaux: Of course, once the board had denied those plans, and in effect, confirmed Lew Moran's decision to deny them, then the companies immediately took the board to court. The trial of that action was conducted in the superior court in Eureka.

There were two or three interesting sidelights on that. The trial itself, of course, is a matter of record. But all of the Humboldt County superior court judges disqualified themselves from hearing the case. So a judge from over in one of the valley counties, I've forgotten which one--Colusa County, perhaps--came over and heard the case. We thought initially that he probably was not sympathetic to the legal grounds, but it turned out differently.

There were two other background matters that it may be of interest to mention. For the same reason that the attorney general couldn't carry the director's legal defense in the timber harvest plan appeal, the attorney general had to disqualify himself from defending the board in this legal suit. The governor authorized us to employ private counsel, and to provide the funds necessary to pay that counsel, which were very substantial.

We employed a firm in San Francisco--Lillick, McHose, and Charles--which was a firm, as I recall it, primarily noted for its expertise in admiralty law and therefore in administrative law, and this was an administrative law matter. One of the problems that we had in acquiring counsel was that many of the leading San Francisco firms already had ties to the timber industry, and they begged off and properly would have disqualified themselves from representing the board because of their having important timber companies as their clients already.

We dealt with Lillick, McHose, and Charles, and Mr. Pesonen and Mr. Berry were very helpful in working with those attorneys and keeping me properly guided in dealing with the board's relationship with those attorneys. I went up to Eureka to attend the trial proceeding, not that there was anything at all for me to do there, but I thought somebody should go and show the flag and display the board's interest in the proceedings.

I arrived there just that morning shortly before the trial was about to begin. Our attorney buttonholed me in the corridor, and he said, "A very disturbing thing has happened. When I went into my office in San Francisco yesterday, there was an envelope lying on my desk. Inside it was a copy of the alternate opinion that was prepared by the attorney general's office in reply to your letter."

The attorney general's office had proceeded as he normally would; his action in response to my letter was to have an opinion prepared arguing the thing each way. Then he decided which letter to send, and from that time on, why, the letter that he didn't send should have been expunged and not revealed to anyone. And instead of that it appears on our attorney's desk.
Vaux: This posed our attorney with a serious problem, because he didn't know where the alternate opinion had come from, whether it had come from someone who thought they were being helpful to him by providing him with that legal background, which I'm sure he didn't need, or whether it had been put there by someone else with very different motives, with the thought of introducing that fact later on in this trial as a disruptive element.

So he couldn't figure out what to do—I mean, he couldn't figure out which of those sources of the document was most logical, and it obviously upset him. What he finally decided to do was simply to tell the judge before he made his presentation on the substance, that this document had arrived, the circumstances under which he had found it, and let the judge know so there'd be no basis for any subsequent disruption of the proceedings.

As is now a matter of record, the trial went very well, and the judge's opinion sustained the board on all the charges that were raised. The superior court's finding came out in mid-summer; I can remember receiving the telegram in Scotland. By the time that came out, then there was a six-month period when appeal from that hearing could be taken. But by that time, the park bill had passed Congress and so any further appeal was moot. So that's where that thing stands legally. It was never really firmly resolved that the board was right, but it does have a superior court opinion in support of its position.

__Lobbying of Board Members on the Redwoods Issue__

Lage: Was there any behind-the-scenes lobbying of board members, yourself especially, over the redwoods issue by either side, or by the Brown administration?

Vaux: Of course, it depends a good deal on what you include in lobbying, I suppose. I've always presumed that, for whatever reason, my own situation was somewhat unique in the sense that, as I think I told you earlier, prior to my appointment when I discussed the outlook with Governor Brown one of the questions he asked me was, "Do you think you can stand the heat?" I assume he meant by that that there would be lobbying pressures of one kind and another.

Frankly, I never felt that in any very open way. So far as the redwood park specifically goes, perhaps that got closer to what might be called lobbying and heat than any of the other issues that the board dealt with during my term. But even there I would have to say it was not lobbying in the sense that I think of it, so far as I was concerned. I can't speak for other members of the board because they might have been subject to a variety of pressures that I didn't know about. I'm
Vaux: sure they were. But my style of operation was not to deliberately seek out that sort of information from other board members, and I never happened to encounter it particularly.

On the redwood park thing, I do recall that the principal of one of the lumber companies that was involved came to see me two or three times, not particularly at the time of the appeal hearing; this was before that. His approach was more to give me background information on what the company was doing and the kinds of relationships it was having with the United States attorney general's office, and with the Park Service, and with other agencies of that sort, to be sure that I understood what the company was doing to try to resolve the thing in ways that might not always come out clearly in public testimony.

Now, my interpretation of this was that, obviously, he wouldn't have come unless he felt it was going to have some effect on my thinking, but there was never any even implied threat or pressure in that sense of the word. That was perfectly natural, I thought, that there should not be anything of that kind, because—and we may have something more to say about this in a more general context later on—

I think for lobbying to exert pressure in the sense in which most of us see it, there has to be some personal stake that the individual who's the subject of the lobbying has if there's to be any kind of attempt to influence behavior by other than simply logic and persuasion.

Lage: And information.

Vaux: Information. Probably information, persuasion, and that sort of thing should be considered as lobbying, but if it is it seems to me entirely constructive and a very legitimate part of the political process.

Lage: I didn't really mean it as something underhanded, but whether--

Vaux: But I think lobbying carries a negative connotation in most people's minds, so I'd like to make the distinction clear. With that distinction made, I suppose it's fair to say that probably I received quite a little lobbying of the positive sort, in the sense of information exchange, expressions of viewpoint, and this sort of thing.

But in view of the fact that I had no visible constituency of my own, no visible or identifiable political aspirations of any kind, lobbying in that lesser sense of power play I don't think entered into my experience at all. I think that probably would characterize most of the board members, because while membership on the board is a political appointment, as far as I can see there are practically no political or personal assets associated with it. People do it because they want to do it, not because they're going to get any very tangible return out of it. Mostly it's just a lot of deadly dull work with few rewards. [laughter]
Lage: [laughter] It has to have some rewards to get all you important people there meeting month after month.

Vaux: The kind of people that were on the board when I was there, I think regarded it as a significant form of public service, and as a way to have some influence on matters important to their particular personal objectives, whether they were environmental, or industrial, or political process, or what they were. They saw it as some way of achieving such personal objectives. But that's a pretty slim basis on which to exercise very much political pressure.

Lage: Did you get much feedback from your own colleagues in the forestry school? The redwood park was such a hot issue.

Vaux: Virtually none.

Lage: They stayed clear of you?

Vaux: I don't even know whether they had any very strong feelings. The forestry department, I think as a rule, has tended to not become heavily involved in symbolic political issues. I'm sure they would have all had positive opinions one way or another about the park issue, but I don't think they were personally involved to a degree that many people were in picking up the cudgels and manning the ramparts one way or the other.

So that's not a very exciting answer to an interesting question.
The Section 208 Study

Vaux: Well, enough of the redwood park. At this point 208 was getting underway with a lot of preliminary skirmishing and negotiation in which Mr. Cromwell was extremely helpful. Prior to the time he came on board, efforts to arrive at a meeting of minds between the State Water Resources Control Board and the Board of Forestry on how the state's response to the Federal Water Pollution Control Act of 1972 would be organized was just getting nowhere.

The Federal Water Pollution Control Act of 1972--amendments, actually, to the original act--required states to develop methods of treating non-point source pollution. Point-source pollution is pollution that comes out of a pipe or a smokestack, and non-point source is the kind that would develop in forestry or agriculture where whatever it is that's presumed to have some kind of polluting effect covers a whole area of land and doesn't come out of a pipe.

Lage: Was Section 208 also passed in '72?

Vaux: Yes. And EPA had dodged the issue for several years. They'd done a great deal of work on point sources of pollution, but they had never done anything on non-point source, because it's a very difficult problem, and nobody was quite sure how to handle it. One of the environmental legal groups had brought suit against EPA and forced them to deal with non-point source pollution, and non-point source specifically included silvicultural sources of pollution.

The State Water Resources Control Board [SWRCB], as the lead agency in the state for handling all matters of concern under the Federal Water Pollution Control Act, had the authority to do something about this. Specifically, they had authority to determine "best management practices" [BMPs] for silvicultural activities and to see to it that there was a system in place to secure adoption of the BMPs by private owners. Under the federal law, states had a good deal of
flexibility as to whether compliance with BMPs would be voluntary or enforced by regulation. The forest products industry was very much opposed to having the State Water Resources Control Board do this job. They were anxious to have the forestry agencies do it, and the State Water Resources Control Board apparently was not about to authorize the State Department of Forestry to do it.

So Cromwell's arrival, to my astonishment and totally advantageously, opened another different door, and that was to let the Board of Forestry, which now had a staff independent of the Department of Forestry, do it. So a contract was then negotiated between the State Water Resources Control Board and the Board of Forestry to have the Board of Forestry, with its staff, do the study that would be the basis for determining best management practices for silvicultural non-point sources of pollution.

That all got underway during the summer of 1977. The study by the Board of Forestry started in that fall with a staff of people funded from money that came from the State Water Quality Board under this contract. The staff was drawn primarily from the department. So just what's going on here is not entirely clear, but apparently there were interests that didn't want the Department of Forestry to do it that were willing to have the Board of Forestry do it.

This was an unprecedented task for the board, to take a contract to do something, so it was kind of strange arrangement. But, at any rate, that's the way it was done. That wouldn't have come about, certainly, without Cromwell having been there as executive officer. That 208 study then went on for a year or more.

There are some other points that should be made. Most people saw the 208 study as solely a study of water quality considerations. I saw it as considerably more than that, and I think the board members saw it as considerably more than that. The 208 study required a comprehensive review of virtually all the forest practice rules, to see whether they had some implications for water quality or not. So the 208 study committed us to look at all the forest practice rules, in some sense.

Now, that obviously made it possible to combine with it three other things that were, I'm sure, of concern to the board. First, there was now following the appointment of Harwood and Pesonen, a new environmental majority on the board. It was perfectly logical for them to want to review the whole set of rules from a different perspective from the board that had originally adopted the rules. As I mentioned earlier, I was concerned because, particularly in the case of the silvicultural rules, but also in the case of some others, I thought the existing rules were nonsense and needed to be reviewed.
Vaux: from a technical standpoint. So, in effect, both of those things were accomplished at the same time, and in the same process, even though it was always referred to as "the 208 study."

Lage: I see; well, that's an interesting point.

Vaux: I think it's important because some of the things can't be explained on other bases, because they didn't have enough bearing on water quality control to make sense as a 208 thing. Although that was the means that made it possible for us to review all the rules in a relatively brief span of time, although it would seem like an inordinately long process.

Lage: Were you using the staff of that 208 study to do some of this broader review also?

Vaux: We used mainly our own staff to do the broader review.

Lage: And you had a subcommittee also, didn't you?

Vaux: There was something called the BMPSAC (Best Management Practices Standing Advisory Committee). BMPSAC was established in response to statements in section 208 of the federal statute that required that these best management practices all be developed with public input. As I recall it, the BMPSAC Committee represented a variety of agencies and interests. Dave Pesonen chaired that committee until he became director of the department, and he was quite instrumental in the planning phase of just how this study would be done. I think that was the committee's major role.

So that whole process was going on. The memorandum of understanding with the State Water Resources Quality Control Board was signed in September. From then on, a tremendous amount of effort by staff and board and everybody else was devoted to this 208 review, as it was called.

Harmonizing the Forest Practice Act with CEQA

Vaux: There was one other element that has to enter into this broad subject of review of the rules, because it was intertwined in ways so that only with great difficulty could they be separated. That was a lawsuit earlier on, called NRDC [National Resources Defense Council] vs. Arcata Redwood, where the court had found that forest practice regulation was indeed subject to the requirements of CEQA [California Environmental Quality Act]. I think we talked last time about the problems that created for the Brown administration right after they took office.
Vaux: Some emergency adjustments were made, but those were recognized at the time as immediate, short-term emergency things. There was a need to go over the rules from the standpoint of the harmonization of the Forest Practice Act with CEQA. That was going on at the same time as the silvicultural thing, the response to the orientation of a differently constituted board, and water quality; all of this in one great big mess of pottage.

Lage: When we talk about rules, it's still kind of obscure to me what exactly these rules covered. Was this a large body of rules?

Vaux: It's a large body of rules. I should have brought a copy of the rules along and showed it to you. I'll try to bring it next time. There was a separate set of rules for each of three forest practice districts; the north coast, the north Sierra, and the south Sierra.

Lage: So there were three separate sets of rules.

Vaux: Three separate sets of rules. In many ways they're similar, and in the course of this review, some members of the board were anxious to make them more similar, although I never felt that was particularly essential. Indeed, in the coast district there are two sets of rules, one for the major part of the coast district, and then a separate, special set of rules for the southern coast district, which is essentially Marin County and south.

Lage: And these are forest practice rules.

Vaux: They're detailed rules that cover harvesting methods, road construction, stream quality protection, soil erosion protection, a little bit on insects, disease, and fire, a lot on procedures that must be complied with in the course of developing timber harvest plans, filing timber harvest plans, approving timber harvest plans, how timber harvest plans are amended. Almost any aspect that you can think of about operating a logging operation, there are rules covering it.

Lage: This is something that's unique in California, could we say? Or more extensive?

Vaux: It's more extensive. Oregon and Washington both have forest practice rules, but there they tend to be promulgated statewide; they tend to be, as I recall it, approved by the legislature. So they don't have the volatility that our forest practice rules have, where the board is actually the rule-making body. Once adopted by the board in accordance with due process, then these rules have the force of law.

I think this is almost a unique case of a board of forestry having the power to adopt administrative rules that have the force of law. That's one of the reasons why the system is controversial, because some people think that gives the board too much discretion, and that rules having the force of law only ought to be passed by the legislature.
Vaux: At the same time, it puts a lot of additional responsibility on the board to see to it that its rules conform to due process, and its rule making conforms to due process of law. Because if they don't conform to due process of law, then somebody can challenge them right away, and they're out. Some of the rules are repeatedly challenged in courts of law.

SB 886 and Section 4555: Limiting the Director's Discretion

Vaux: One final thread here coming out of Redwood Creek that we ought to tie up before we stop: before the Redwood Creek hearings came on, Senator Nejedly, one of the authors of the Forest Practice Act, was disturbed because he had consistently followed a line of argument that the industry was strongly supportive of. He argued that the Forest Practice Act set up these rules with the idea that the rules became the guide for the director in determining whether he would decide that a plan was in conformity with the rules, or that a plan was not in conformity with the rules.

The director, even before Redwood Creek, had denied some plans--I think particularly a plan at Camp Meeker, and a plan in Big Creek over in Mendocino County--on which we'd had an appeal hearing--essentially on the ground that it was in conflict with the intent section of the Forest Practice Act. The industry, and Nejedly agreed, felt that this was an improper delegation of authority, and that the director should only be able to deny plans if they were not in conformity with one or more of the rules of forest practice.

So Nejedly had introduced in January of '77 something called SB 886, which was an amendment to the Forest Practice Act that required that in denying a harvest plan, the director could only do so if he found it in conflict with a rule of the board. That upset some members and was greeted with glee by other members of the board. It upset me because, in the face of, now, a strong environmental majority, I could see my own bogeyman under the bed (which never materialized) and that was that the environmental majority would insist on making rules about absolutely everything so that the director would have a rule to deny almost any plan that came along.

It would break down the board to make all those rules, and it would break down the system to operate that way. So I was opposed to this and sought a way out. The only way out I could find was an amendment to the original SB 886 which Dean Cromwell and I drafted, and is now in Section 4555 of the Public Resources Code. In an effort to keep the board from feeling it had to make a rule on everything, that amendment said that if the director was faced with a plan which could not be denied because there was no rule that he could find that it conflicted with, but where he felt the plan would have long-term detrimental environmental effects
Vaux: and therefore would be in conflict with the intent language of the Forest Practice Act, he could under that circumstance delay action on the plan and take the question—not the plan, but the question, the issue that arose where there was no rule—to the board and ask for a rule. Or at least ask the board's opinion as to whether there should be a rule or shouldn't be a rule.

Senator Nejedly fortunately saw the usefulness of that, and he bought the amendment without any trouble, so SB 886 was passed with that amended language in it. So I don't think the board ever felt that it had to make rules on everything. I think it agreed it had enough rules already, and this procedure would be enough to take care of it.

I think in practice it worked out pretty well that way. There were a few actions brought under section 4555 where the director asked the board for an opinion on an issue the timber harvest plan created in his mind, but there were never very many of them.

One of the little ironies was that we had discussed this amend- ment that eventually became section 4555 in the board before I took it to Senator Nejedly, so I took it over there with the board's request that it be adopted. For some reason, Dave Pesonen missed that session of the board. The attorneys sometimes had court commitments and so couldn't attend portions of board meetings, and I think he was away--

Vaux: Dave Pesonen then read in the minutes about the board accepting this and recommending it to Senator Nejedly. He was outraged because among his other qualifications he's a very good constitutional lawyer, and he saw this as creating a double jeopardy problem. Or maybe not double jeopardy, but in effect, changing the law on somebody while they were in mid-process. I can't delineate all the constitutional aspects of this.

Lage: Double jeopardy as far as timber operators were concerned?

Vaux: Yes. Dave thought it was simply unfair and not in accordance with due process to have a set of rules, have a guy submit a plan that was within the rules, and then change the rules on him before the plan was approved. I said, "Dave, that may be fine; you're probably right, but I think the practical alternative at the moment would be worse."

The ironical part of this was that Dave Pesonen later became director, and he was the first or second to use 4555 and bring something to the board [laughs] for an opinion. So while he didn't believe in the legal adequacy of it, he wasn't averse to using it when he became an administrator.
Senator Nejedly's Admonition to the Board

Vaux: One more thing on SB 886, then we'll come to a good stopping place. SB 886 passed, and the following events didn't happen, I think, until the following winter, because SB 886 wouldn't have gone into effect until the beginning of 1978. Pursuant to SB 886, the board adopted a strange rule that, in effect, delegated the discretion back to the director. At least that was the effect of the language.

Senator Nejedly was bright-eyed, and he saw that. I was sitting there one day at the board meeting, peacefully presiding and not expecting anything particular, and all of a sudden I saw the room begin to fill up. Subsequently, I saw Senator Nejedly come in and sit down. Customary procedure when a member of a legislature comes is to welcome him at a convenient break. Senator Nejedly was duly welcomed and then marched in to a real thorough chewing-out of the board. Oh, he was just merciless. Because he believed, and I think he was right, that the board had simply ignored SB 886 and turned around and done the same thing it--

Lage: Made a rule which did the same thing.

Vaux: Yes. He ended up by saying that, "If the board hasn't got the gumption to make the necessary and proper rules, you'd better resign and let somebody do it who can do it," and so on, and so on. Of course, this crowd, apparently, had gotten the word that Senator Nejedly was coming to chew out the board and were there to enjoy the fun.

So the board was duly obedient and rescinded its rule forthwith, and made a new one that was more in conformity with SB 886 to pacify the senator. We got along very well with Senator Nejedly in the main and in subsequent handling of this kind of question. The board did from time to time, in response to issues—not often, but on the four or five occasions when I can remember 4555 being exercised, the board would give the director some guidelines how to handle a particular--

Lage: Rather than making a rule?

Vaux: Sometimes they didn't make a rule. The first one Pesonen sent to us under this was an area of private land that was an inholding inside a wilderness area. There was a very complex background of land exchange and so on involved. Dave was concerned because he felt it would be destructive to wilderness to have this area cut.

Due to further delays on Jerry Brown's part in appointing members, and to the death of Dwight May, and various other attendant circumstances, we had a quorum of the board that day, but I think there were only five members there, and three of them were industry members. So you knew you weren't going to get a very strong rule on this out of the board anyway.
Vaux: The board did adopt a rule, but it was a pretty conventional one—and it sort of followed the Redwood Creek pattern—that where there was an inholding and where action by public agencies to acquire the land was reasonably under way, that approval on the plan could be deferred for a specific period of time to give the normal processes of government time to carry on.

Maybe that's a good place to stop, because I think that fairly well buttons up Redwood Creek and 886, and we can move on into the 208 thing next time, and we get increasingly caught up in administrative review of the board by the state agency that was set up to review all rule-making procedures.

Lage: So you had someone looking over your shoulder.

Vaux: Yes.

[Part II, Interview 6: February 4, 1986]##

Lage: You wanted to review the issues of SB 886.

Vaux: Yes, we can pick it up where Senator Nejedly had finished chastising the board. His amendment to the Forest Practice Act, SB 886, essentially had provided that—let me back off a minute.

Up to the time of SB 886, both the director of the Department of Forestry, Mr. Moran, and Mr. [Larry] Richie as state forester, and the board, had assumed that in reviewing a timber harvest plan, the director could rely on interpretations of the intent language of the act, which of course was very broad, as a basis for denying the plan. Even if there was no ostensible violation of a specific rule in the plan, the director by use of his discretion could find that the plan didn't conform to the objectives of the act.

This was the issue that had agitated Senator Nejedly, so his new law provided that the only basis on which the director could deny a plan was if it was in violation of a rule. And that if the board wanted the director to use his own discretion in arriving at a judgment on a plan, the board would have to give him specific standards to use in the exercise of that discretion. So from that time on, a lot of the effort and complexity in revisions of the rules went to the business of writing into the rules standards that the director could use in exercising discretion on issues that weren't necessarily explicitly covered by a rule—using the intent language, but using guidelines and standards about the meaning of that intent language that had been developed by the board and incorporated in the rules.

That resulted inevitably, as the rules were revised, in some lengthening and more specific content in an effort to eliminate the rather general language that was present in the earlier rules. Language
Vaux: of the kind "when feasible" or "reasonable"—this kind of thing—the attempt was to substitute for that more explicit guidelines for judgment that would hold up in court.

Lage: Did this reflect a lack of trust in the department on the part of Senator Nejedly?

Vaux: I don't think it reflected specific lack of trust. I think it reflected a general principle of government that almost all legislators will at least give lip service to. I know that Senator Nejedly gave more than lip service to it; he thought it was simply a basic principle of good government: that wide administrative discretion was a dangerous thing, and that, in all practicality, there had to be some administrative discretion, but the use of it should be controlled, the objectives of it should be clearly defined, and the limits of it should be clearly defined. So I think there's a principle of government that's involved there, rather than distrust of individuals, although the principle of government arises in fact from the point that there are plenty of historical examples of government officials misusing discretion.

And, of course, in the redwood park case, I think some people honestly thought that the director was misusing his discretion. Other people thought that that was a fine use of discretion, depending upon where you stood.

Lage: Did some of this attempt to put more power in the board grow out of that redwood park case?

Vaux: It was not an attempt to put more power in the board; it was an attempt to force the board to use the power the legislature had given it more firmly and explicitly, and not simply delegate that power to the administrator. Remember, when Senator Nejedly came to visit us, he said, "If the board won't use the authority that the legislature has given it, then it ought to resign and let us appoint somebody who will use it properly."

Lage: He was pretty strong about it.

Vaux: He was very strong about it, yes. So I don't think there'd been any feeling of misuse of authority directed at particular individuals, although the action on the redwood park and other plans as well were felt by many members of the industry to be a misuse of the director's discretion. One of the charges that was made, and it was one that Senator Nejedly was particularly sensitive to, was that in a lot of other plans the director had used the possibility of denying the plan as leverage to get things that he wanted in the plan that weren't required by the rules. That was a much more general complaint than just in the Redwood Creek situation. So in that sense the SB 886 restraints went to a broader issue than just Redwood Creek.

Vaux: Since we're moving into a period of two or three years when the board was dominantly concerned with the revision of forest practice rules, it might be well to just talk a little bit about the simply editorial nature of that job. I made a note last time to get you a copy of the forest practice rules, but I haven't been able to find you a copy of the complete set of rules that would be definitive, so I'll just illustrate with material here.

This is a copy of the forest practice rules as they were in 1976, about the time I came on board. There were three sets of forest practice rules, one for each of the three districts. These are the ones for the coast forest district, and they're some thirty-two pages of single-spaced text. The others are of somewhat similar length. They are divided into a number of articles, many pages on definition of terms, and then functional articles: one on silvicultural methods, one on logging practices, one on erosion control, one on stream and lake protection, one on hazard reduction, one on fire protection, one on insect and disease protection. So there are eight or nine articles in here, each of which has a good many specific rules included in it.

Lage: Those were effective August 19, 1976.

Vaux: Yes.

Lage: These are the ones the Nakae board put together?

Vaux: Yes. The general effect of the work of the board I was on was to make the rules even longer and more involved, and I'll comment a little later on why that was so. But the point is, these are simply the forest practice rules, and in addition to that the board was responsible for a good many other kinds of rules. There was a whole area of rules governing the operation of the wildland fire protection system, control burning, the chapparal management program and things of that sort that came generally under the rubric of fire protection. There were the rules for urban forestry, which didn't exist in 1976 but came along after the passage of the Forest Improvement Act, rules governing range improvement burning, and a variety of other topics of that kind for which the board had responsibility, that didn't have anything to do with forest practice.

These rules are part of the public resources code and in effect were the rules that bore on members of the public and were the device through which the state tried to control what people did, either in relation to fire or in relation to range improvement, or in relation to forest practices.
Vaux: In addition to these, there was a whole set of rules in the so-called California Administrative Code that defined the procedures that would have to be used by the state, and by people dealing with the state, in the preparation of timber harvest plans, in the securing of burning permits, in the securing of permits to, for example, take land out of the timber preserve zone—or the timber production zone as it was later called—for tax purposes, all this kind of thing; there were very specified procedures that had to be defined and set out in rules. The board was responsible for those.

So the mass of rules that was involved under the board's jurisdiction would be several hundred pages of typed or printed material.

Lage: It's gigantic, it really is.

Vaux: And that was simply the starting point, as I'll outline a little further.

Lage: Did you know what you were getting into when you took this job?

Vaux: Only in a vague sort of way. I knew generally what it was. Once one got used to the procedures and the procedures became clarified, I didn't find it as frustrating. At the beginning I found it quite frustrating because, as I've indicated earlier, the board's own procedures were not well-defined and not very logical.

We would get into this very uncomfortable position where the District Technical Advisory Committees would have formulated language and the State Department of Forestry would have formulated language, and these two sets of language would come to the board then, with the various partisans in the constituencies arguing at the hearings over which of these two sets to adopt, or perhaps a third set.

That was very frustrating, because who should the board be primarily guided by—the District Technical Advisory Committees which were established in law to advise the board, or the Department of Forestry, which was the agency primarily concerned with having to enforce the rules whatever they were? I found that period of the first year or so extremely frustrating for that reason, because the board was put in a position of inevitably having to rule against one party or the other. That left you in an ongoing uncomfortable position of either appearing to ignore the DTACs or appearing to ignore the department.

Lage: Did they usually have a different point of view?

Vaux: Oh yes, they usually did. At that stage, in general the department evidenced somewhat more environmental concern than the DTACs. I'm not saying the DTACs in any way ignored the environmental concerns, I'm just trying to characterize the two positions in the spectrum of all-out production versus some consideration for environmental values.
Vaux: That was almost predictable because the Department of Forestry essentially represented the Brown administration's point of view, which was more environmentally concerned than some previous administrations. The DTACs, because of the historical context that I mentioned earlier, were at that time more industrially oriented. I think that changed somewhat as time went on.

But that sort of problem gradually began to resolve itself after we changed the internal organization of the board; got a board staff, which would then prepare a set of rules for consideration by the board, taking input from both these sources. The dynamics were interesting, because before this change took place the issue that repeatedly came up was, "Whose draft are you going to put out for hearing, the DTACs' draft, or the department's draft?" People perceived tremendous tactical advantage in having their draft put out.

So regardless of what happened in terms of the board's ultimate action, a lot of feelings got bruised if you chose either one of these drafts to put out.

Lage: It put you in an adversary position regardless.

Vaux: Exactly, exactly. The simple device of having the ability to put out the board's draft from the staff resolved a lot of that fairly rapidly. Then it was the board staff that took the rap, and everybody could jump on them. That was a much more tenable sort of position to operate from than one where there was this vying to see who would have the advantage in writing the draft on which the hearing was conducted.

Lage: Was each one of these rules subject to the hearing procedure?

Vaux: Well, sometimes a hearing would be on a particular rule where a particular problem arose. When we got into the major revision in response to 208 and in response to AB 1111, which I'll comment on later, and in response to my initial concern over the silvicultural rules, these more general revisions, then we'd take one of these chapters at a time. There'd be a big package--there's one here someplace, seventy-five pages--which would represent all the material on a particular article in the rules.

Lage: The board members were given this in advance, I assume, to go over?

Vaux: Everybody was given it in advance. In other words, the rules for adopting forest practice rules or any kind of a regulation by any state body like the Board of Forestry, required a public hearing to be held. They require that a document be prepared containing the existing language in the rule, if there are any existing rules on the subject, and the proposed revision, along with some discussion of the intent and authority and the problem involved causing the rule revision.
Vaux: That all has to be put for thirty-days consideration by the public before the hearing can be held. So it's not only board members that have it, but everybody who might be interested can get a copy of that ahead of time. Now, the nature of that process changed during my membership on the board.

AB 1111: Regulating and Complicating the Regulatory Process

Vaux: When I first went on the board, public hearings had to be held, but the rules governing public hearings were much less detailed than they subsequently became. When I first went on the board, we could take a single rule and generate language and hold a public hearing and adopt the rule, and at that time once the board adopted the rule, then it could go into effect in, as I remember it, thirty days; simply time enough to notify people that the rule was in effect. So you could revise a rule fairly easily in four to six months.

Along about 1978 or '79, AB 1111 by Speaker McCarthy became law. That was a statute that was responsive to people's rising sense that there were too many rules, not just forest practice rules, but the whole regulatory scheme.

AB 1111 was an attempt to set the regulatory house in order by specifying in great detail how boards and commissions could legislate this stuff. There were very specific requirements not only for advance public notice of the hearing and of the content of the regulations that would be dealt with at the hearing, but formal reports going with the hearing language showing the authority for the language, the problem it was supposed to deal with--in other words, the necessity for it--its relationship to other statutes, what the effects on the costs of local government were, what the effects on the costs of people affected by the rules were--small business included--and a variety of other things of that sort. Quite a bit of documentation just to get to the hearing.

AB 1111 also set up a further review process after the board had finished its action on the matter. Previously, when the board adopted a rule then it was law, and it was a matter of getting it publicized and into effect. Instead of that, the whole adoption, along with detailed documentation of the fact that the board had followed all of the procedures required by AB 1111, had to be forwarded to the Office of Administrative Law.

They had to review it against four tests. One test was the necessity for the regulation. One test was whether the agency had the authority by a specified law to make the regulation. Another test was
Vaux: whether it involved conflict with any other regulation anywhere in the codes of the state government. And another one was whether the regulation was clear or not. The Office of Administrative Law could reject the regulation that the board had passed on a finding that it didn't comply with any one of those criteria. If they made such a finding, then the new rule would be rejected and would come back to the board, and you'd have to do it all over again.

Lage: Did that happen?

Vaux: In a few cases. Never on anything very substantive. But these can be very demanding criteria. Fortunately, our staff was so good that they were able to send most of the stuff through with very little difficulty with the Office of Administrative Law. But there were some packages of rules that were sent back because something had not been procedurally proper.

In other words, the Office of Administrative Law had no authority to challenge the substance of the board's determination about what a forest practice rule ought to be. But they could challenge whether this rule was really necessary; I don't think they ever challenged that. They did challenge, sometimes, the fact that it was in conflict with other statutes or that there hadn't been a showing of proper authority under statute for it. But usually, in the limited number of cases that did come back to the board, the Office of Administrative Law's quarrel with us was on fairly minor grounds; it was rather readily fixed.

That procedure greatly increased the time that it took to accomplish these matters and proliferated the paper work just unbelievably. Our submissions just for one article in here that might be ten pages of actual rules would be supported by five large-size binders of documentation.

Lage: Think of the staff required in the Administrative Law Office as well as your own staff.

Vaux: To review it, yes.

Lage: How large did the staff get on the Board of Forestry?

Vaux: The Board of Forestry still has a very small permanent staff. It has the executive officer and his assistant executive officer, who half-time takes care of the forester's licensing function and the other half-time acts as the assistant executive officer. And a couple of secretaries, sometimes as much as two and a half secretaries, something like that.

But on this job, the department would loan the board additional staff. They would simply be assigned by the department to work with the board staff. They'd be under the direction of the board staff, so
Vaux: you were out from under the onus that this was a Department of Forestry job. The people could work under the direction of the executive officer of the board without being perceived as necessarily minions of the department. So at the peak I suppose we might have had two people from the department working on assignment for the board, but that would vary with the work load, which was a sensible way to do it. It kept us from having to build up ongoing board staff just because we had a heavy work load on this stuff.

That's some of the background of the kind of thing that the board was involved in increasingly in these rule revisions. Entirely apart from the work that the board undertook to do in terms of the board members having certain conceptions about what needed to be changed, how we did that was vastly modified by the AB 1111 thing. The 208 process became much more complicated because at the same time that we were trying to respond to the 208 requirements, at that same moment we were having to respond to these AB 1111 requirements that arose with entirely different motivations and entirely different purposes. So that got to be all intertwined together.

I have a note here to point out that on March 27, 1978, roughly two years after I went on the board, Chairman Nakae's admonishment to me to keep Redwood Creek off the board's agenda finally came into being when the president signed the Redwood National Park Enlargement Bill. And from then on we didn't hear anything more about Redwood Creek. [laughter]

Role of the Registered Professional Forester in Providing a Functional Equivalent to CEQA

Vaux: Shortly after that, a different sort of issue arose that to me was of considerable importance. I'd like to call attention to it because it doesn't emerge entirely clearly in the minutes. One of the things that the board had been doing over the first two years that I was there and dealt with increasingly after Mr. Cromwell came on in 1977, was to try to revise the rules to comply with the court finding, basically in the lawsuit between Arcata and the Natural Resources Defense Council, which required some melding of the Forest Practice Act with the requirements of the California Environmental Quality Act.

The approach that we took to do that, the basic issue was, how do you allow the Forest Practice Act, timber harvest plan [THP] process to go forward and have it accepted as a functional equivalent of an environmental impact report under the California Environmental Quality Act? The basic differences there between the environmental impact report and the timber harvest planning process are, first of all, time scale.
Vaux: The time requirements for environmental impact reports are very long, running into months. This is not a time span that the industry considers that it can live with. It believes it has to have much more flexibility than that long time span requires. A second issue is the amount of detail that you go into, which in an environmental impact report is a good deal more than is involved in the timber harvest plan. The third is the amount and opportunity for public input into the process.

These were all aspects that had to be resolved if you were going to make the timber harvest planning process stand up to scrutiny as meeting the functional equivalence test as compared to the Environmental Quality Act. Mr. Cromwell and I both felt that a key to achieving this functional equivalence was the role of the professional forester. The normal review process under the California Environmental Quality Act and the environmental impact report did not involve a licensed professional person, licensed by the state, as part of the process. We thought that one could legitimately and appropriately use the presence of that person to deal with some of these accommodation problems.

We also thought that required, clearly, that the registered professional forester, the licensed individual, had some responsibilities toward the public interests that had to be recognized and fulfilled. This seemed to us reasonable because the whole forester's licensing act justifies licensing on the ground that the practice of forestry is in the public interest.

Without actually a tremendous amount of recognition on our part that this was going to cause people problems, we put into the Forester's Licensing News a short two- or three-page article to call the matter to the attention of all registered professional foresters: a statement about new requirements and role for RPFs in preparing timber harvest plans.

Lage: Was this while you were developing these rules? Or after they'd been--

Vaux: This was after the development of some of the rules that dealt with harmonization of Environmental Quality Act with the Forest Practice Act. This was going on at the same time as we were trying to respond to SB 886.

Lage: This all gets very involved.

Vaux: It gets involved because you're doing two or three different things at once, and to try to sort out in neat little flow diagrams what was happening just isn't possible, because it doesn't work that way. But partly in response to SB 886, and partly in response to the impact of Arcata vs NRDC there was put into the timber harvest plan regulations something called a feasibility analysis. This was where the registered
Vaux: professional forester was supposed to consider the alternatives, which is a buzzword in CEQA, consider the environmental impacts of all the alternatives, and select the feasible alternative that minimized the environmental consequences, and provide mitigation measures—these are all buzzwords out of CEQA.

Lage: So it gave them a key role.

Vaux: The registered professional forester was to take account of all these things in his feasibility analysis and reflect that feasibility analysis in the timber harvest plan. So that the things that CEQA required in the EIR were recognized in the timber harvest planning process and, in effect, considered and implemented by the licensed professional forester.

Lage: But the licensed professional forester worked for the timber company.

Vaux: The licensed professional forester might be employed by the landowner or by the timber company, but at the same time the plan is reviewed by other licensed professional foresters who are employees of the state. But more importantly, the laws—CEQA and the Forest Practice Act—are as binding on the landowner as they are on anybody else.

So the concept was that it was up to the registered professional forester to recognize what the law and the public-interest considerations were and so advise the landowner. If he couldn't convince the landowner that this was the appropriate thing to do under the law, then we believed he was bound not to sign the timber harvest plan, which was required by law, you'll remember.

It was never entirely clear what that requirement for the forester to sign the timber harvest plan meant. We thought, at this point, that this is exactly what it meant, that if the forester's perception of what the public interest values related to the THP were and how they ought to be protected was something that he couldn't get the landowner to agree to, then he shouldn't sign the plan.

So that was the general philosophy that was outlined in this little statement in the Forester's Licensing News. That was received by the profession with outrage; I think that's the only appropriate term to use. Many of them simply could not understand it as being in any way authorized by law. Many of them felt very deeply that they were placed in exactly the position that you were suggesting of having to serve two masters. We contended that that was a misunderstanding of the situation, that all we were asking RPFs to do was to interpret to landowners what the law meant and what the rules meant.

Lage: It makes them more professional, in a sense.

Vaux: Of course it does.

Lage: It makes them take kind of an independent stance.
Vaux: It realizes, to me appropriately, the language of the Forester's Licensing Act, that the practice of forestry is in the public interest. That's a nice, general phrase, but what does it mean? It seems to me this is an appropriate and to me essential meaning for it if there is to be a truly professional practice.

Lage: Was this something that you thought of? Or Cromwell, or do you know where it came from?

Vaux: We worked it out together, I think would be the simplest way to think of it. But you can see that the concept goes back very much to the Institute of Ecology's proposal for the Z'berg bill initially, where all the responsibility without any guidelines whatsoever was given to the forester. Of course, that was turned down at the time. We visualized this as a new attempt to move in that same direction; we saw moving in this direction as an answer to the CEQA problem. But it wasn't perceived that way by many, many foresters, and they were outraged by that.

Lage: How did this outrage get expressed?

Vaux: The outrage got expressed--oh, somewhere here I've got a file of forty or fifty letters that the board received from foresters expressing their outrage.

Lage: A lot of them were probably your former students.

Vaux: Yes, sure. I never sought out comments other than those that were volunteered to me, but I was told by some people that people were saying, "What's the matter with Hank Vaux, is he in his dotage?" [laughter] There was a legitimate complaint on these people's part, in that the simple assertion that we made about what the role ought to be then raised some difficult issues that we had not resolved, of authority versus responsibility.

In other words, under the statute the authority and responsibility of the RPF is required to go only as far as the preparation of the timber harvest plan. The actual operation might or might not be under his authority. There was an implication all the way along here that we were requiring him to be responsible for things that he didn't have authority for. That was an additional element in the problem here besides the serving two masters aspect.

The upshot of this was that several of the licensed professional foresters who felt agitated about this organized, in effect, some caucuses of foresters who were equally concerned. They held meetings at various places. Dean Cromwell and I appeared at a number of those meetings to try to explain things, and receive complaints, and pour oil on the troubled waters, but at the same time try to get somewhere with the concept that we felt was important.
Vaux: Out of all that squabble, which eventually simmered down as squabbles do, came two things that were of ongoing importance. One was the formation of another forester's organization, the California Licensed Forester's Association, which was formed with a membership consisting solely of licensed foresters and focusing on the problems of the regulatory process. The other two forester's associations are either broader in membership, like the Society of American Foresters—you don't have to have a license to belong to that—and the Consulting Forester's Association, where you have to have a license but had other concerns. The industrial foresters, for example, weren't for the most part members of the Consulting Forester's Association.

So this group, California Licensed Forester's Association, was made up solely of registered professional foresters, and primarily those who were concerned with writing timber harvest plans. That organization has been up and going ever since and has played a significant role in dealing with the board, making representations before the board. Before its existence, there was really no body that regularly appeared and testified on behalf of the profession before the board. The Society of American Forester's came occasionally, but mainly on very, very broad policy issues. There was nobody who was sort of a designated board watcher on behalf of the profession up until the time this association was founded. Since then, they've devoted a lot of attention to this, and that's resulted in improved communications with the profession—provided another channel of flow that was important.

The other thing that was done was to establish a Registered Professional Forester's Liaison Committee in the Board of Forestry. This was a committee appointed by the board whose express function was to provide a liaison between the registered professional foresters and the Board of Forestry. That committee—I haven't heard much how it's working lately, but I know during my tenure on the board, from my standpoint, it worked extremely well because it served as a place the board could turn to and could get balanced thinking from people in the profession who were representative in some sense—as representative as a six-person committee can be—and who serve as a channel of communications back to a broader base of people. They made a lot of very worthwhile contributions as time went on.

So there was some additional structure that evolved out of this flap that I've always considered very helpful and constructive, even though I haven't always agreed, necessarily, with the viewpoint and approach of the Licensed Forester's Association. I'm a member of it, and I think it's done a useful service.

Lage: What happened to the concept of making the registered professional forester responsible?

Vaux: It's been built on successfully so far.
Lage: So it did go into effect.

Vaux: Oh, yes; there was never any question of repealing the law. In part, the flap was a concern over what it really meant. The original article recognized that there might be some problems with understanding what it meant, and it was an attempt to deal with potential problems of understanding. All these discussions and organizations represented an enlarging of understanding. I don't think everybody necessarily eventually agreed with it, but everybody understood it very much better.

When something like this comes down, which poses to some people an apparent threat to their economic security, it's very disturbing. People see a lot of bogeymen under the bed, and the discussion of it served to remove some of the bogeymen, as well as to clarify some of the real issues and begin to get some work going on what those issues were, particularly this matter of authority versus responsibility.

Lage: Wasn't there something in the legislature about this whole issue of the functional equivalency to the CEQA bill, or was this whole problem delegated to the Board of Forestry to figure out?

Vaux: There were various legislative passes at it, and there were problems with CEQA in a number of areas, not just forestry. So various revisions to CEQA clarifying the functional equivalency concept and so on took care of some of forestry's problems. There has been a steady drive on the part of industry ever since Arcata versus NRDC, which focused the issue, to have forest practice regulation exempted from CEQA. This is a point that the environmental groups have resisted with great firmness.

While there has been discussion of it in the legislature in a number of sessions over the years, there has never been any successful move to exempt forest practice regulation from CEQA. So the functional equivalence concept is still the basis for the regulatory process as far as CEQA goes.

Use of Section 4555 to Clarify Overstory Removal Rules##

Vaux: Then there was one further aftermath of the SB 886 thing that is interesting. You'll recall that in the course of legislative consideration of SB 886, the board had recommended an amendment to Senator Nejedly giving the director the right to delay, in effect, action on a plan where he thought the plan was not in conformity in terms of the intent language but there wasn't a rule of the board to guide him. He could delay action on the plan and bring it to the board for review of the issue and consideration of whether there should be a new rule or not.
Vaux: The first use of that section, Section 4455 of the Public Resources Code, came in the summer of 1978. It involved a strange issue because there had developed out of practice a silvicultural method called "overstory removal" that had become very widespread. There was no provision in the forest practice rules for overstory removal, but it turned out to be a matter of practical necessity because a lot of stands of timber had been logged over very heavily in the fifties and sixties. A substantial overstory of old-growth trees had been left, either because they were of less desirable species, because they were more advanced in their stage of senescence and decay, or for other reasons which affected their economic value.

They'd been left so they were there, basically a wasting asset in the sense that they were no longer growing vigorously. They stood in the way of oncoming trees. Economic circumstances had changed enough so that people were now anxious to log them. So the overstory removal concept was brought in under the director's earlier flexibility to use the intent language; he felt this wasn't contrary to the intent of the Forest Practice Act to take these things out, so he authorized them even though it wasn't in the rules.

It turned out that over the years what had been designed as a device for taking care of a practical situation of limited extent had reached the point where, in some forest districts, as much as half of the cutting was actually being done under overstory removal, rather than one of the authorized silvicultural rules.

Lage: Would they use different methods in overstory removal?

Vaux: They wouldn't use different methods, but different restrictions applied. In effect, what was happening was that overstory removal as a technical term to a forester applies to a situation where you have at least two age classes of trees, one old-age class, and then a younger-age class that's already established on the ground. You remove the overstory so as to release the young-age class and get faster growth underway.

But this was now being applied to areas where there was an overstory to be sure, but there wasn't any understory of young trees to be released. So the effect of the thing was essentially that of a clearcut, but it could be carried out without the constraints that were put on a clearcut.

I always felt section 4455 justified itself on that first case alone because it surfaced this matter, and the board adopted rules so that overstory removal could continue to go on where it was legitimated by the practical circumstance that there was timber that was no longer good forest growing stock and ought to be removed--could be removed. But if there was not an understory of already established trees to be released by this overstory removal, then it had to conform to the restrictions of a clearcut because of the environmental consequences of not doing that.
Vaux: In a way, some operators used the original overstory removal concept, if there were a few trees left on the ground from earlier logging, as a way to get around the clearcut restriction.

Lage: Kind of a loophole.

Vaux: Yes, and this was simply a matter of clarifying that.
Vaux: I'll mention that in the fall of 1978, to become effective in '79, the legislature adopted the California Forest Improvement Act, which did three things. It set up a system of state-supported subsidies for small private landowners who accomplished various kinds of specified silvicultural or other resource management projects. It set up a program of so-called urban forestry for the first time, where the state participated in programs in the metropolitan areas for more effective use of trees for various kinds of urban purposes. And it set up something called the California Forest Improvement Committee, which was chartered by the legislature to make a study of all aspects of private forest ownership and make recommendations of what else needed to be done to stimulate forest productivity. An interesting feature of that law had to do with the financing of it.

The original bill simply provided for financing out of the state general fund, which was the source of financing for all the other forestry legislation, for the most part. It happened to come before the assembly the week after Proposition 13 was adopted, at a point when everybody in Sacramento was in a state of extreme distress, not understanding what the full consequences of Proposition 13 were, and where any additional demand on the treasury was unlikely to receive much support in the legislature.

It was quite apparent the bill was going to be dumped for that explicit reason, and Governor Brown very wisely, I thought, took out the language that required funding from the state general fund and substituted for it language that said none of the money for funding this program would come from the state's general fund. As a result of that, the act passed. Then the next year he went back to the legislature and introduced a new bill which provided that the receipts from state forests should go into a special fund called the Forest Improvement Fund, and the Forest Improvement Act would be financed by the Forest Improvement Fund.
Vaux: This was a principle that had been applied to a limited degree in some other situations. For example, earlier on, some of the tidelands oil money had gone into subsidizing forestry research, and things of that sort. This was an attempt to apply that concept, which to my mind has always been sound, that you ought to take some of the money derived from natural resource activities and plow it back into the investments that you need in natural resources.

Lage: Previously had that money gone into the general fund?

Vaux: Previously, the money had gone into the general fund or to other purposes specifically provided for by law, so essentially it was a semantic proposition, but politically it worked very well. Fortunately, there is one state forest, Jackson State Forest, that yields a significant amount of income, up to as much as six million dollars a year. Much of that has been available to support the Forest Improvement Program.

Some other things were beginning to emerge at this time. The board had established a Research Advisory Committee in the earlier part of its tenure, and that Research Advisory Committee reported in June of '79. We had a very interesting new appointment to the board in August of 1979, one which I think was very good for the board, and one which gave me a very great deal of personal pleasure because of the opportunity to associate with him. That was the appointment of George Duscheck as a public member of the board.

In my opinion, Mr. Duscheck was almost an ideally qualified public member. He knew practically nothing about forestry to begin with. I don't know whether you recall him or not, but he used to be the science reporter and the investigative reporter for the news program on KQED, the public television station, a man with a heavy beard and a lively mind. He had previously been a newspaper reporter before he'd gone into television.

His background, both as an investigative reporter and as a science reporter, was just ideal to contribute to the board. George was able to raise questions of a kind that were significant, that were intelligent and aimed at the central issue because of that kind of background and training. I think none of the rest of us on the board had the capability to do this so effectively. George could listen to a witness on some new subject for five or ten minutes, and at the end of that time he would know what was the gut question to ask that ought to be brought out before the rest of the board. He was very, very skillful at this.

Lage: Without the background in forestry?

Vaux: Of course, he quickly assimilated a lot of background in forestry as he went along, but the thing that was important was this questioning technique. The responses not only answered his questions, but they
Vaux: illuminated the discussion for all the rest of us; he could fit things together in logical terms out of his kind of experience. So that was a very interesting appointment, I thought. Apart from that, George was a very personable individual and I thoroughly enjoyed my associations with him, and I've carried them on since then.

Also, George had the proper newspaper man's orientation that it didn't make any difference which side of the question a particular witness might be trying to expound to the board; George was always on the other side. He was challenging. He could do this without getting anybody mad at him, in a very tactful way, and that was a valuable contribution.

Effectiveness of Board Subcommittees

Vaux: So, along through '79 and '80 we began to get a lot of the foundation work done on the 208 revision, on the AB 1111 reviews, and all this kind of thing. The work of the board had sorted itself out into a pretty well-established pattern where we had three established subcommittees that conducted a lot of the preliminary analysis on behalf of the board.

That subcommittee thing I thought worked extremely well because it saved a lot of time. Previously, all matters had been initially reported and then hashed out in all their gory detail before the full board. This was an almost endless and very confusing process because to try to get nine people to even see a given problem in the same light, much less agree on the language of the board response, was almost impossible.

The subcommittees, which were carefully constructed to have on them at least one representative from each wing of the board, the environmental wing and the industry wing, enabled people to discuss matters and talk about them much less formally and really analyze them and get some perspective. They would then bring back a report to the board that had the highlights of the facts and some analytical content. The staff also contributed a lot to these reports, under the direction of the subcommittees. That expedited the work of the board quite a lot.

In the case of 208, a huge staff report of two volumes of large size was put together by the early spring of 1980. We had an editorial committee of I guess three people, similarly composed. Later that became an editorial working group--because another procedural change that had come along before 1980 was legislation sponsored by Barry Keene that again influenced how all boards and commissions acted.
Vaux: Keene's legislation attempted to bring all actions by boards and commissions under the light of public scrutiny. The only two topics that the board could meet on in executive session were personnel and litigation matters. Personnel matters fell into two categories: the appointment and advancement and evaluation of the board's own staff, the executive officers, and the disciplinary cases that came up under forester's licensing. Those were the personnel matters, and the other matters were litigation matters. Those were the only topics that the board could meet on without it being a public meeting. In the event that executive sessions were held, it was incumbent on the board to report immediately in public meeting what business it had accomplished; any resolutions that were adopted had to be publicized at once.

Lage: And this went for the subcommittees, also.

Vaux: This went for any group of three or more board members. So a subcommittee was subject to the same rules. The subcommittees were all in public; there were no private subcommittee meetings. All the best work of the board got done in those subcommittee meetings because it was much less formal; you could have free interchange with the people who were present. They were always well-attended by outsiders, constituents.

Lage: So it wasn't really a private working-out of things.

Vaux: No, it wasn't. The working-out was all done in public. There wasn't any private working-out of things. I suspect this is a misconception that stands in the minds of many people about how a board like that functions, and I'll make some general observations about it later on, as to why I think there isn't much private working-out.

There were a few instances where there was private working out of specific language that might meet a particular crucial issue. But it was much more in terms of getting common understanding of what certain language meant, rather than in terms of "I'll trade this for that," and that kind of thing. And there are some very good reasons, I think, why that latter pattern of behavior simply really doesn't apply very much to something like the Board of Forestry.

Lage: I think it would be hard to conduct business if you had no place to talk without an audience.

Vaux: It makes it harder; that's right, it makes it harder. You asked somewhere here for comments on public input. Insofar as the public participation process is part of that public input aspect, it's a mixed blessing. I'm not arguing against it; I think it's very important, and you have to have it. But it does make reaching some kind of accommodation on a particular issue more difficult.
Lage: Were the subcommittee meetings, then, somewhat formal, with microphones and all so that the audience could--

Vaux: They weren't that big. I suppose the attendance at an average subcommittee meeting would be from fifteen to sometimes as many as twenty-five people, depending upon the subject. The Forest Practices Subcommittee was usually the best-attended because that's where all the rules got chewed around. The Resources Protection Subcommittee, I suppose, was the least well-attended. But they all had attendance with three board members, sometimes four, depending on the committee, two or three department staff people, and then anywhere from five to twenty constituency people.

They were very informal in the sense that the three board members ordinarily would sit at one end of a table in a conference room where they could have ready access to each other. Everybody else would sit around, some at the table, some against the wall, and so on. There would be a certain amount of deference to the board members if the board members had questions or discussions that they wanted to carry on, but it wasn't necessary for people to get formal recognition by the chairman of the subcommittee before speaking out. Other participants felt free to interject thought into the conversation and so on. So it was a very informal kind of process.

Lage: Did you get involved in all these subcommittees?

Vaux: Oh, I couldn't be involved in all of them. Strategically, from my role of chairman, I shouldn't be involved. I chaired one of them; I chaired the Legislation and Policy Development Subcommittee. Most board members were members of two committees. Our pattern was such that there were three subcommittees, and usually they would all three go on simultaneously, as I remember it. So I guess the nine members were divided among the three subcommittees; that's the way it tended to work. And they would all go on simultaneously.

But we saved a tremendous amount of time by that because you could have two- or three-hour subcommittee meetings in the afternoon on the first day of a board meeting and really get three times as much business accomplished as you would have had it all been full-board panels. And everything the subcommittees did, essentially, always went back to the board for final action.

Lage: And did they have minutes taken of their meeting?

Vaux: No, they didn't have minutes taken of their meetings. The chairman of the subcommittee was required to make a report to the full board of the subcommittee meeting. That report was incorporated in the record of the board, and a summary of it was ordinarily included in the minutes.
Vaux: That reminds me of a point that I wanted to make. There's a difference between the minutes of the board and the record of the board. That may explain why the minutes are so uninformative about substance. The substance is in the record, and the record consists of tapes of all the conversation that went on in the board meetings—not the subcommittee meetings, but the board meetings, were taped from beginning to end. Then all the documents that were submitted are part of that record. So all of the substance that's so superficially glossed over in the minutes is available in the board record. That's where any historians would have to go to dig out the meaning of some of that stuff that's alluded to in the minutes, but by no means clear. The minutes, in some way, are simply an index to the record.

Lage: Yes, they tell you where to go.

Vaux: But so far as the record is concerned, there was no record of the subcommittee meetings.

Lage: Other than the report.

Vaux: But there was a report.

Developing Water Quality Standards for Forest Practice Rules: the 208 Report

Vaux: To get back to 208 and AB 1111, by the spring of 1980 the 208 report was nearing completion, and this shows how complex things can get. Just in case we didn't cover it thoroughly initially, the upshot of the original conflict between the Board of Forestry and the Water Resources Control Board over how 208 should be studied was that the Water Resources Control Board gave the Board of Forestry a contract with money to make a study of forest practice rules as best management practices.

The board staff, with supplementation provided by the funds made available under the contract, carried out that initial study. This eventually became known as "the staff study," and this was the two-volume job. As the staff study emerged, the problem arose, "Are you going to take everything in this two volumes and get board acquiescence in it, or is there some other approach?" because that would have been a monumental task.

The feelings were strong on both sides, and you got challenge of almost every statement and every fact in the staff report. So the procedure that the board agreed to was that the staff study would be made, and that would be submitted to the Water Resources Control Board,
Vaux: in fulfillment of the board's contract, essentially. But that then the Board of Forestry would review and hold hearings on the staff report and make its own summary and conclusions from that.

So by the late spring of 1980, the staff report had been pretty well finished, and the board was busy trying to jell its report, which was a much briefer, twenty- or thirty-page thing. That was drafted by an editorial working group, so-called with the happy thought that it would not work in public because it wasn't a subcommittee of the board.

Lage: But was a group of three or more.

Vaux: But it was a group of three, yes. It was the only practical way to do it. It would never have gotten to a resolution of the thing. It would have just bogged down in continuing quarrel if there hadn't been a small group of that sort that could look at things in practical terms, rather than have to take positions on principle, which is what people have to do in the public meetings.

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Vaux: There were a number of difficult issues in the resolution of the 208 thing. One of the most straightforward ones was the question of what water quality standard you should take as the objective of regulation. The water quality control people, whom one or two members of the board concurred with, kept insisting on a no-degradation standard, period.

Their concept was that you said, "No degradation," and then administratively, you could make concessions here and there where it seemed reasonable to do so. The majority of the board didn't agree with that. I think, partly in the light of the education we'd received from Senator Nejedly, that again this was the old discretion issue. I think the majority of the members of the board felt that to use a no-degradation standard got you back in the administrative discretion problem, and it just wouldn't work.

The most attractive alternative standard that seemed to be reasonably objective was no pollution in quantities deleterious to fish. There was a substantial amount of testimony that if the water was kept in a condition where it wasn't deleterious to fish, then people could swim in it, and it would be potable for drinking, and this kind of thing. So that was the essential stand that the board finally adopted.

Many, many details in the staff report on stream protection conditions and road construction consequences were the subject of violent debate. The board's report had to find ways of accommodating different views on those things.

Lage: Did the staff tend to be more environmentally oriented than the mixed bag of board members, or the reverse?
Vaux: I don't think you can attribute this to orientation of the staff, particularly. It was a function of what the job was. They had to produce a report that would be acceptable not only to the Board of Forestry, but also acceptable to the contractor, the Water Resources Control Board. So the staff couldn't afford to take a strong position; they had to take a position that brought out both sides of the issue, illuminate what the issue was.

That, I think, was what the staff report did very well, rather than take a position. It was up to the Board of Forestry, then, to take its position on the staff's report.

Lage: Did the Water Resources Control Board pass on the Board of Forestry's decision? What was the final authority?

Vaux: The whole argument was over the Water Resources Control Board's mandate under Section 208 to establish best management practices in the area of silvicultural non-point source pollution.

Lage: Would they accept whatever the Board of Forestry adopted?

Vaux: The argument was, would the Water Resources Board accept the forest practice rules, or would they go and make their own rules? In which case, you would have had two sets of rules about the same thing. So the industry, and I think most thoughtful people, were interested in being sure that there were not going to be two sets of rules that might be in conflict with one another and that the forest practice rules be recognized as BMPs [best management practices].

But the water quality people and many of the environmentalists were holding onto that authority for BMPs, to use that as a lever against the timber regulating process, whoever was involved in it, to get the water quality standards raised. So this was the tension that was involved. It wasn't really a matter of who was more concerned with water quality and who was more concerned with something else, it was a question of where do you get a balance between these political tensions? A little bit different question.

So naturally the water quality people held out as long as they could for a very firm stance on water quality, figuring that the longer they held out, the more they were going to get. The Board of Forestry was under some compulsion to yield enough so that the water quality people didn't disavow the board's solution and come up with a new set of best management practices. The board's 208 report essentially was to accept the notion that all the forest practice rules ought to be reviewed in light of water quality considerations and subject to the full public hearing process. Objectives were stated in the board's report in terms of this water quality standard, that it would conduct this review of the rules and revise the rules in conformity with that standard as might be needed.
Lage: Was it Dave Pesonen who chaired that subcommittee?

Vaux: Yes, it was under the forest practices subcommittee of the board. That was the board's liaison with this process, and Dave was chair of that committee.

Lage: When he became director of the department, didn't he stay on it?

Vaux: He stayed on, although by that time a large part of the work had been done, as chairman of the BMPSAC, which was an outside advisory committee, but not as chairman of the forest practices subcommittee of the board. He was no longer on the board as far as its involvement in 208 was concerned.

Lage: BMPSAC. Best Management Practices—

Vaux: I guess it's just BMPs Advisory Committee. Or standing advisory committee, I think.

I mentioned two or three of the issues that were the most crucial ones in the 208 report. There was continued dissatisfaction by the industry and a continued advancement of the argument that a number of states had had their 208 programs approved by the federal government without any regulation whatsoever. And that it was unfair to make them conform to something much more rigorous, as the water quality and forestry boards seemed inclined to do.

I think the basic argument there, that most members of the board went along with, was that we have a very rigid water quality control system in the state as a result of other statutes. The basic Water Quality Act of the state, because of the tremendous importance that water's always had in California, sets a very strict standard for the maintenance of water quality. Particularly in the light of Arcata vs NRDC, where the judge ruled that administrative bodies like the board had to try to bring laws into conformity with one another--CEQA being the principal example of this--we felt there was a compulsion on the board to be sure that the Forest Practice Act water quality standards were somewhat commensurate with the water quality standards elaborated elsewhere in law. I saw an analogy there between those two things. So that entirely apart from 208, I felt the forest practice rules required some work to make them consistent with the existing state law on water quality.

Benefits and Costs of Forest Practice Regulation

Lage: What about the economic arguments of industry? Was there a problem of competing economically with out-of-state companies?
Vaux: Yes, that was one of the problems that they were raising, that this put them in an unfavorable position economically. That's a valid argument. The point is whether it becomes the overwhelming argument, or whether it's simply one factor that you take into account. It always seemed to me that it was one factor that you tried to take into account.

It was difficult to take it into account because while it's clear that there were economic effects of the forest practice regulation on the industry, the magnitude of those effects is much more difficult to determine. I've written about this elsewhere, so I don't need to air all that here.*

The other thing that needs to be taken into account is the benefits, not just the cost to the industry, but the benefits to whomever, that arise from the regulatory process. In terms of water quality, in terms of prevention of erosion, in terms of improvement of wildlife habitat, whatever. To this date, as I perceive it there's practically nothing by way of measures on the benefits side--

Lage: Economic benefits are you thinking of?

Vaux: However you measure it. In economics or any other terms. My own answer to that problem is that where you're talking about particularly intangible benefits, then one of the few measures that you have that at least has some degree of foundation other than individual subjectivism to it is the state of the political climate. If everybody's unhappy about water quality impacts or wildlife impacts or aesthetic impacts of forest practices, that indicates that the situation is far from optimal in terms of values being returned.

If people are just in sort of a steady state of grumbling, but not actively hostile, probably that's a measure of a better state, and therefore there are more benefits. To go beyond that, it seems to me extremely difficult in the present stage of knowledge about these things. So the economic costs are real, and there ought to be attempts at evaluating them.

I made two attempts. One, I made an evaluation just on my own for a paper that was published by Resources for the Future. I think that was the first even comprehensive guess that was made about what the costs to industry and to landowners were. I put that forward a little bit with tongue-in-cheek, because it was no great survey; it was kind

Vaux: of going around and listening to informed foresters and seeing what they felt, and running a few simple, very broad numbers. I came out with a guess, as much with the thought, "This may be completely wrong. If it is wrong, I'll hear about it, and that's as valid a technique for generating information on cost as anything." To my utter astonishment, those numbers for a while became the accepted numbers. I don't know whether they were right or not, but at least, they were accepted.

Lage: The industry didn't challenge them.

Vaux: They never challenged them. There were some quiet quibbles that, "You underestimated this," or, "You overestimated that," or whatever, but nobody ever published a set of numbers that was anywhere nearly as carefully thought out as my set of numbers was. In fact, nobody came out with any set of numbers at all.

One of the things that we had to do because of AB 1111 was to build into our forest practice rule adoption process some assessment of the cost to the landowners. That became a regular part of the hearing document. So some better, much more detailed, cost numbers actually came out of the rulemaking process. That was my second effort to get a better handle on costs.

In the hearings, some of the industry people finally began to contribute some numbers in the testimony. The only thing I can conclude from this is that either the industry really doesn't know what its costs are, or its costs are so varied--I suspect this has a lot to do with it--from one operation to the next because of topographical differences, vegetation differences, soil differences, and so on, the costs actually are tremendously varied. So that an average doesn't mean much anyway.

That may be a reason why there's been little forthcoming on it, or it may be that the numbers that are being used are sufficiently liberal estimates so that nobody thinks it's worthwhile to challenge them. Or there may be other explanations. But the cost thing was an issue that Mr. Trobitz raised repeatedly in board discussions, that we ought to have better information on this, and I thoroughly agreed with him, but this is kind of a counsel of perfection. To get it either requires an effort by industry, or a very, very costly effort by some research agency that would be hard for it to carry out without the help of industry.

Lage: Yes, with a lot of cooperation.
Block Voting Pattern Develops, 1980: Industry versus Environmentalists

Vaux: Another topic that involved much more of our time in 1980 was the question of public notice rules. This had to do with how much and what kind of notice you should give members of the public when a timber harvest plan was proposed. The board's concern with the public notice rules came from two kinds of origins. One was the public involvement sections of CEQA, how to harmonize with that. The other was a totally independent thing arising out of a lawsuit in southern California, which had nothing to do with forestry but had a lot to do with general land use. It mandated the practice of advising adjacent landowners if certain things were going to go on. This was a constitutional question, that adjacent landowners were constitutionally entitled to some notice.

This was very bitterly disputed by the industry. Partly it was a cost concern because they could see that, ultimately, the costs of this public notice were going to come to bear on them in terms of the actual costs of putting out the notice, and in terms of the costs of dealing with any additional public opposition that might be created when such notice was given. Thirdly, a legitimate concern was that they had equipment and other things of that sort out there in the woods that was largely unprotected most of the time. That public notice invited vandalism, or if there was antagonism of some sort, actual sabotage action against their equipment, and this kind of thing.

Industry was very strong on this. That led, in 1980, to what I call the first of the divided votes. Prior to that time, most of the votes by the board had been astonishingly unanimous. There would often be one exception or possible two, but up until that time there didn't appear to me to have been any party-line voting, or block voting.

Lage: That's amazing in itself, considering all the things that you accomplished, the issues you dealt with.

Vaux: Obviously on the redwood park thing, on what I call the symbolic issues, there was block voting, but the symbolic issues were usually pretty minor in relation to the real, more fundamental issues that the board was dealing with. On the more fundamental issues the voting had not been block voting up to that point. But it was definitely block voting on this one, and from there on out the block-voting pattern persisted. The characteristic vote, rather than being eight to one, seven to two, nine to zero, whatever it might be, from there on it was more six to three, and five to four.

Lage: I can understand it on this one, but why did it persist?

Vaux: I think part of it might have been a reflection of--you can put it one of two ways--a feeling by the industry that they'd tried to be cooperative for a long time and weren't getting a sufficient degree of sympathy,
Vaux: therefore they'd simply buck everything as a matter of principle. Or it may have been a reflection of the fact that--we talk about industry and environmentalists as though these were sort of monolithic groups, and they're far from monolithic.

Lage: That's what I was thinking.

Vaux: Their viewpoints change over time. It could have been associated with a dominance of a different group of people in the organized industry, such as the California Forest Protection Association.

Lage: But also there's the question of what the relationship of the so-called industry representatives on the board was to the industry. Were they really supposed to represent the industry, or were they just supposed to come from the industry? I mean, the environmental members weren't beholden to represent the point of view of the Sierra Club, or some other environmental group.

Vaux: That's a definite distinction between those two constituencies which is important and explains some of the things we've already talked about and will talk about some more. The structure of those two groups is very different. First of all, the industry interest I think is much more sharply focused. "Forest landowners" is a much better term to use in this context than "industry" because a lot of these forest landowners are not connected with the industry. You have to remember that two-thirds of the private forest land in California is not owned by the forest products industry. Two-thirds of the private forest land to which these regulations apply belongs to small, independent landowners who have acquired their properties for the widest possible variety of reasons, none of which may be timber production, although some of it is. But despite that variability, I think all private forest landowners, virtually, have a significant concern in the economic viability of their ownership.

That's a unifying theme, whereas the so-called environmental group is much more diversified, with a much greater disparity of interests between them--with some people interested in birds, some people interested in hunting habitat, some people interested in fish, some people interested in their water supply, some people interested in wilderness, some people interested in aesthetics, some people interested in what's happening on the forty acres next to where they have their residence or cabin. This is reflected in the organization. There isn't just one organization that speaks for all environmentalists, although all environmentalists, regardless of what group they represent, speak as though they alone represented the public interest.

Lage: Right, that's the other distinction.
Vaux: The way this works out in a body like the board, I think, is this: structurally, because there is a Forest Protective Association, a Forest Landowner's Association, and so on, the members put on the board as drawn from the forest products industry can and do reflect the dominant viewpoints of the forest landowning group as a whole more consistently and more accurately than any group drawn from the environmental sector, much less a group drawn from the public—which is where board members come from—could possibly do.

Lage: Now, the environmental members were the public members?

Vaux: There's no instruction in the act to appoint environmentalists. The point is to appoint public members.

Lage: Yes, that's right.

Vaux: Every governor has included among the public members some environmentalists. Probably the difference in the Brown board, between it and the Reagan board that preceded it and the Deukmejian board that followed it, was that there were more environmental members drawn from the public on that board. Again, this is a very subjective kind of expression, because what's an environmentalist? Am I an environmentalist? In some sense, yes, but I have a very different view from David Brower, or even Phil Berry, on matters of this kind.

Lage: So of your public members, you could say Phil Berry certainly comes out of the environmental movement.

Vaux: Yes.

Lage: Duscheck wouldn't have.

Vaux: To a lesser degree, anyway. I suspect George perhaps was a member of the Sierra Club, I don't know. But he was a journalist with a distinguished professional career as a science reporter and as an investigative reporter. He was looking for the facts and then trying to judge how to apply the law.

Lage: But not involved in the same way. Was there anyone else who was involved like Phil Berry?

Vaux: Cecile Rosenthal was very much involved in the Sierra Club. Clyde Wahrhaftig was very much involved in the Sierra Club. So there were three members there who clearly were identified as Sierra Club people. But some people would argue that while the Sierra Club is very prominent in the environmental movement, it isn't a dominant reflection of the point of view of all environmentalists in the same way that the California Forest Protection Association is of forest landowners.
Lage: By the same token, I wonder if these three people saw themselves as bringing the Sierra Club party line to their decisions.

Vaux: I think they were much more sophisticated people than that. I think they were obviously strongly reflective of Sierra Club interests and concerns, and environmental interests and concerns generally. Now, if you believe something that happens to be the same as the beliefs of an organization, then when you represent those beliefs in a public body like this, are you simply carrying out a party line or are you carrying out your own convictions? It makes a difference, because of the political rhetoric that gets involved.

Lage: It seemed to come out, in a small way, on the issue in the Santa Cruz area, where the national Sierra Club had a different point of view from its local chapter.

Vaux: Of course, there's a perfect example of what I'm trying to talk about here, and I'm just using the Sierra Club as one example--because there were a lot of others: we had very active participation in board hearings from the Audubon Society and from Cal Trout and various other groups that weren't the Sierra Club but certainly should be classed as environmentalists.

Now, in the Sierra Club itself, over the issue of county control, there was a difference between "the Sierra Club" and the Loma Prieta Chapter of the Sierra Club.

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Vaux: One of the frustrations that the industry had to put up with and never--while I was on the board, I think--really found a way to handle to their own satisfaction was, how you deal with a group that's so amorphous that two bodies representing essentially the same organization take completely opposite positions? Who can you pin down, and what can you make them adhere to?

We were talking earlier on about political trade-offs and bargaining. How can you bargain significantly with a body that's as fluid and independently fragmented as a so-called environmental group? The bargaining thing just isn't a realistic part of it. You have to apply some other kind of technique. That's an ongoing difficulty that I think will always be characteristic. You see it in other forms, too, besides this one. I'm not sure how we got off on this particular tangent.

Lage: I think I led us off on a tangent, but it's interesting. We were talking about the divided votes, the first of the divided votes.

Vaux: Yes. I don't want to make too much of that. I just want to say that that was one of my perceptions, that over this public notice issue, from there on, there seemed to be a different and a somewhat harder line on the part of the industry on a number of things.
Lage: Did it make working together more difficult, and subcommittee proceedings?

Vaux: No, I don't think so because one of the many fine things about the people on the Brown board, by that I mean the people Governor Brown appointed to the board, was that they could disagree on things but have a minimum of personalization of the issues. I'm sure some members of the board, for various reasons maybe weren't particularly intimate with other members of the board, but I don't recall any instance where this ever got personalized--where two board members engaged in confrontation with each other on personal grounds rather than on grounds of whatever the issue was that was being argued. For me, that was a very happy thing because that can make a lot of difference in the atmosphere that surrounds a group like this.

Reforming the District Technical Advisory Committees

Vaux: Maybe this is the point to address one other sort of developmental kind of thing that was going on through this period of time. Then we can perhaps recess for today--two other things.

I alluded earlier to some problems in the role of the District Technical Advisory Committees. Coming out of the historical fact of the old District Technical Committees having had the power to make rules, following the passage of the new Forest Practice Act, the District Technical Advisory Committees de facto had to assume the same role of drafting rules because there wasn't anyone else available to do it. So they got in the habit of doing that.

They were then somewhat resentful when the Department of Forestry proposed its own draft of rules without consulting them, and even more bent out of shape when the board would sometimes accept the department's proposals rather than the DTAC's. Coupled with the fact that the environmentalists, because of unfortunate handling of the proceedings of the North Coast DTAC, felt that the DTACs weren't a place where environmentalists could go and be heard.

That all resulted in enough disaffection from that system so that the Calvo bill, which was in the legislature in '78, '79, I think, actually contained a provision which would have disestablished the District Technical Advisory Committees. Fortunately, our remedial measures, such as the establishment of a staff, the procedure of having board staff draft the hearing language, a certain amount of education of people as to what the realities of the new system were, had pretty well resolved that problem by the summer of 1980. So through the big
Vaux: burden of this 208 rule revision thing, which was just about to come on us, that was not any longer so much a problem. The DTAC role, and the board staff role, and the department's role, I think, were more universally perceived as in balance. The legislative effort to do away with the DTACs had pretty much disappeared.

A lot of that accomplishment, I think, was due to a man named Harry Camp, who served as chairman of the Coast District Technical Advisory Committee for several years in this period and did a marvelous job of bringing a sense of process and a sense of openness to the DTAC meetings that hadn't prevailed before.

Another item that could be spoken of here is another part of AB 1111, Speaker McCarthy's law revising the procedures whereby boards and commissions made rules; in addition to this review of new regulations by the Office of Administrative Law that was provided for, and the setting up of standards against which that review would take place, the law required, and the governor mandated a timetable for not just the application of these standards to new regulations, but for a review of all the existing rules against the same four criteria. That review was not, admittedly, as rigorous, but it had to be done. This was something else that was added to our work load in the early 1980s.

Enforcement of the Forester's Licensing Act

Vaux: One other thing that I'll mention here just in passing was the enforcement of the forester's licensing act. I've touched earlier on some of the problems inherent in enforcement of standards on forester's licensing, particularly in the area of discipline, which was quite difficult to do. A number of disciplinary cases were handled from time to time, but as I think I mentioned earlier, the original statutes, in effect, were not well-designed from the standpoint of a clear and visible system of discipline.

In the winter of 1980-81, a case that had been under study for a good many months came to fruition, and for the first time the license of an RPF was rescinded on disciplinary grounds. That license was removed from the individual, as a result of which he lost his livelihood, essentially. What followed indicates the nature of some of these processes and how long it takes to resolve them before you really arrive at a firm, public policy decision.

The license was withdrawn from the man, he was not allowed to practice. He went as was his right to the courts and appealed. The board was sustained in the trial court. He appealed the trial court's finding to the appellate court, and the appellate court found that the
Vaux: board's procedures in handling this case, and particularly the failure of the board to establish standards of what constituted gross incompetence, were improper and ordered the man's license restored, which was done.

The board has since been working on developing standards for this kind of thing. Shortly after the first of the year, about a month ago, a man came to the door who turned out to be a process server and served me with a complaint and a lawsuit brought against me and about eighteen other individuals in the State of California and the Board of Forestry for violation of this man's Fourteenth Amendment rights. He is suing me personally for $500,000 damages.

I'm not taking this suit very seriously at this point because I don't think it's well-founded, but it suggests something about how long these processes have to drag on before you're really certain that you have something established on firm policy grounds.

Lage: Does the state cover you for instances like this?

Vaux: Under state law, the attorney general must defend you, and the state must reimburse you for any acts that you took as a public official that were taken in good faith and in conformity with law. This suit not only challenges that the action was in conformity with law, the Fourteenth Amendment, but also asserts that the actions were taken with malice and utter recklessness as to the consequences.

If it can be shown that the actions were taken with malice and utter recklessness, then the state is not bound to indemnify for that kind of damage. These are punitive damages, so-called.

Lage: That makes working on the state boards expensive.

Vaux: If you should lose one, yes. Of course, you never know what the courts are going to do, particularly in an area of this sort. I think it's a case where the individual has a persecution complex and feels that things were done against him for personal reasons.

Lage: What kind of issue was involved? It must have been something pretty gross, to take away his license.

Vaux: There was evidence enough to convince an administrative hearing officer—who's in effect in a judicial process; he's not in a general court, but it's an administrative court—and who heard the case and made recommendations to the board. The board's action was simply to confirm his recommendations. There were charges against the defendant of misrepresentation, of failure to adequately investigate who owned certain property the man was dealing with. In the face of that failure, selling timber to another party, on behalf of an individual who didn't own the
Vaux: property. There was also some incompetence in technical forestry matters of estimating volumes, some evidence of misrepresenting who he himself was, as to whether he was a private consultant or a state official. Taken in aggregate, they were difficult problems.

There were some questions of criminality along the line, too. I can't remember all the details of it now. I know the administrative law judge and all the members of the board that looked at the record didn't feel there was any question about the fact that the license ought to be revoked.

Lage: It wasn't a common occurrence.

Vaux: It's the first one; it's been the only one. One reason for that is that the criteria for withdrawal of a license are very explicit. You can't withdraw a license lightly because you're depriving somebody of their livelihood.

Lage: And yet the court seemed to feel that the criteria weren't explicit enough, or the procedures, or something.

Vaux: Well, the administrative law judge and the trial court didn't raise that question. The inadequacy was only found when the case reached the court of appeals. That court was arguing on procedural grounds; the court wasn't quarreling with the board's judgment. It was quarreling that it hadn't given sufficiently elaborate guidelines so the guy should have known beforehand.

Lage: Oh, I see. The things you mentioned it seems you should know without guidelines.

Vaux: You can't assume that. Particularly in an area of this sort, statutes have to be pretty explicit. I had tried to get the Professional Forester's Licensing Committee to provide such guidelines before this case ever arose. They'd thrown up their hands and come back and said, "We know incompetence when we see it, but we can't give you a definition of it." I had asked for a definition of incompetence. What I should have asked for was guidelines; I didn't realize that until later.

They have now addressed the problem of guidelines. But it will still take a while to get the enforcement aspect installed so it's clearly understood and working properly.
Completing the Rules Revision, an Exhaustive Review of Silvicultural Rules

Lage: Why don't we start in spring of '81, where we left off last time?

Vaux: In the spring of '81, the board was busy winding up some matters that had concerned it and on which it had done a great deal of work for a number of years. The general overhaul and revision of all the Forest Practice Rules was finally coming to a conclusion. I think I can perhaps give some kind of sense of what that involved by talking about the silvicultural rules.

You'll remember that one of the things that I had set as one of my own objectives when I first went on the board was revising the silvicultural rules because I felt they didn't have any real silvicultural content and therefore were defective in some fundamental sense. Even though they had done some good, I don't think they had done what silvicultural rules were supposed to do.

We completed the major hearings and adopted silvicultural rules in July of '81. In effect, it had taken five years to that point to get the job done. It took another year after that before they were finally in place because of discussions between the board and the Office of Administrative Law. But the main job was accomplished, I think, by July of '81.

Some indication of the work that went into that is illustrated here, and I use the silvicultural rules simply as an example because there were other rule-making areas that were just as burdensome. There had been I don't know how many public hearings, spread over about a seven-month period after exhaustive drafting work by the staff and exhaustive reviews by each of the three District Technical Advisory Committees. So all of that had gone on prior to this point.
Vaux: At the actual hearings before the board, there were some thirty hours of public testimony from fifty or more individuals. There were some sixty-five supporting documents. One of the requirements under the new administrative procedures act was that the board had to respond to every issue that was raised in the public testimony. For every issue of criticism or suggestion for improvement or something like that, there had to be a recognition of that issue and some kind of written response from the board as to how it was handling that issue.

If it was ignoring it, why it was ignoring it; if it was accepting it and doing something about it, what it was doing and why it didn't do more. And there were some five hundred issues identified in the report to the Office of Administrative Law and handled in this way. The basic document, just the technical revision of the rules, which included all the old rules being changed, and all the new rules being added in the form of strike-outs and new language, is that seventy pages or so of mostly double-spaced typing [refers to document].

So I simply cite this to give some sense of the volume of work that was involved in that kind of thing. Of course, board members were heaving great sighs of relief as each of these packages would come to fruition. I think there was some sense of accomplishment that went along with this.

Lage: Were these rules controversial?

Vaux: Oh, very controversial. Everything in them was controversial because silviculture sets standards for such things as maximum size of clearcut areas--

Lage: So this is really how the logging would be done.

Vaux: Yes, yes. Well, all the rules, they're forest practice rules, and even though California forest practice regulation is regarded as the most rigorous of any state, all that California forest practice regulation regulates is the logging part of the practices. Our statute doesn't cover any other forest practices like insect spraying and disease control. It does cover fire protection practices but under other statutes than the Forest Practice Act.

If you go out and clear brush off a hillside and replant the area, that isn't covered by the Forest Practice Act. It's essentially unregulated. But, in practice, the great bulk of the activities that occur in forest management occur in connection with logging because most landowners require some form of revenue to finance any kind of major forest practice. That's true in eighty percent of the cases, I think.
Lage: Did the rules that you came up with represent any kind of major reform?

Vaux: I don't know what you call "major reform." They were quite different from the earlier rules in two major senses. One, we tried to introduce into the rules a clearer and more explicit adoption of silvicultural terminology. The original so-called silvicultural rules used clearcutting and selective cutting in the sense of logging, rather than in the sense of the silvicultural significance of clearcutting or the silvicultural significance of selective cutting. The new silvicultural rules tried to use such terms in their silvicultural sense, which relates the cutting method to the kind of regeneration that you're going to get--whereas the same terms can be used in connection with logging without any particular reference to the regeneration that you're going to get.

An example of this kind of deficiency in the original set of rules was this overstory removal that I talked about last time: where overstory removal is a silvicultural practice if there's an understory underneath it because then the removal of the overstory has some definite implications for the establishment and growth of a regenerated forest. But if, as was the practice, the overstory is there but there's no understory underneath it, obviously overstory removal doesn't have any silvicultural rationale to it at all.

So it was tightening up that kind of issue that was one of the things involved here. The other thing that was involved was that the silvicultural standards were tightened up to some extent, particularly in relation to water quality control considerations.

You asked whether the silvicultural rules were controversial or not. They were highly controversial, and there was a great deal of discussion and debate and knock-down-drag-out amendments, and so on, in the course of developing the final package. The final vote was five to four. But to me the interesting part about the five-to-four vote--and as a middle of the roader, it was a point that I took great satisfaction from--the four-vote minority was made up of the three industry members of the board, and Cecile Rosenthal. The three industry members thought the new rules were too constraining, sometimes unnecessarily so. Ms. Rosenthal who was the sternest environmentalist in her perceptions opposed the new silvicultural rules because she thought they didn't go far enough in providing protection. She would compromise within limitations, but there were certain points on which she wouldn't compromise. There were some things in the silvicultural rules that compromised what she felt were points that shouldn't be compromised. I always thought, "If we can get Cecile and the industry voting together, then we must be pretty near the middle of the road." [chuckling]
Urgent Needs: Forestry Research and Public Awareness

Vaux: In addition, at this same time—and I'm using that broadly, not just specifically in the spring and summer of '81 but from about 1980 on—there was a series of reports coming before the board that in my mind were significant in some long-term sense. You have a whole spectrum of policy issues that come before the board of really quite different types: major policy events, as I call them, that command a whole lot of public attention, public awareness, and public input, of which the redwood park would be a good example, all the way to much less exciting, much less apparent matters, but which may in the long run have a more significant effect than these exciting events. And a number of those were coming along at this time.

The Forest Improvement Act, adopted in '78, had provided by statute for a Forest Improvement Committee which was to study the situation of forestry on private lands and come up with recommendations to the legislature as to anything that in the view of that committee, might be needed in the way of statutory revision to increase the productivity of private forest lands. That committee, which had an eighteen-month time deadline, was formed in '78 and reported in 1980 in this two-volume report. The report was to the legislature through the board, so the board had to hold hearings on this report, review it, and pass it on to the legislature.

At about the same time, the board had to adopt its first FRAP (Forest Resources Assessment Program) policy statement for the legislature. Those two reports, and the board's concurrent 1982 annual report to the legislature, were all somewhat consistent documents. They served to stress two very unexciting but in the long run, I think, terribly important concepts. That was the almost disastrous situation with respect to the level of research activity in forestry, where over the preceding fifteen years, obviously the public policy problems in the forestry area were getting more and more and more intense all the time, much more controversy over them.

Over that same period, the real effort—the man-days of research scientists at work on forestry research in California—had been declining by twenty-five percent, which was obviously a fundamentally unsound situation. So the FRAP statement, the Forest Improvement Committee Report, the board's '82 annual report, all three zeroed in on that as one of the major things that something needed to be done about.

The second major issue was the need, in the view of the Forest Productivity Committee and the board's response to FRAP, for much more effective effort to create awareness on the part of the public—I'll come back to what that means—about the nature of forestry problems in the state. There had been so much publicity about specific issues such
Vaux: as the redwood park and various other crisis situations that this sort of dominated public thinking about forestry, and the real gut issues, the more fundamental things, people really weren't aware of. So these reports called attention to the need for having some kind of ongoing program to inform legislators, county officials, public opinion makers of one kind and another, of what the real guts of the forestry problem were, as distinct from these one-shot problems or symbolic issues.

I bring this up because it's so often the feeling of the people who participate that they spend a lot of time in working on these reports, and they're published, and then they go on the shelf, and nobody ever listens to them, and so on. To some extent that's true, too often true. On the other hand, I think it's less true than people sometimes feel because I think one can trace a very definite line of causation from those reports up to the Centennial process that's being carried out by the current Board of Forestry—with two state-wide meetings now, one in Yosemite and one in Sacramento—where these same themes have been stressed, and where, at least in the case of research, some action has actually developed.

The university budget for wildland research has been augmented, and the state budget for wildland research has been augmented. I think one can argue that those early reports were influential in providing foundations. This is not to say it was automatic, but it provided foundations on which the current Board of Forestry has built to achieve some objectives in the policy field that are very important, and which wouldn't have been so easy to accomplish had this spadework not been done by the previous board.

Lage: Was this a committee of the board?

Vaux: No, it was a statutory committee provided for by the legislature, and I can't remember the precise language of it. It was about a twelve- or fourteen-person committee with representations from all of the constituency group—the environmentalists, the industry, the landowners, two members of the legislature; one from the senate, one from the assembly—all chaired by the chairman of the Board of Forestry, as a coordinating device so it wouldn't just be hung out there independently.

The fact that it should be chaired by the chairman of the board was in the statute; then the membership of the committee, as I recall it, was provided for by nominations by the director of the Department of Forestry and actual election to the committee by the Board of Forestry. So the committee was provided for by the legislature, but was a creature of the board. It wasn't just standing off in magnificent isolation from established processes.
Lage: And it was another committee that you chaired and kind of shepherded.

Vaux: Yes.

Lage: This must have taken an incredible amount of your time, over those years.

Vaux: The committee took additional time over and above the board, but it had some small staff, and it did most of its work with eight task forces. The committee didn't have to participate in the work of the task forces. It had to organize the task forces, select their membership, develop charges for them, and that sort of thing. Then it had to take their work when it came back and develop a unified report out of it. Staff and task forces put in considerable time, so the committee could concentrate on reviewing the task forces' work, bringing it together in a unified report, and establishing priorities among the recommendations. That's the way those committees tend to operate, with volunteered time from people.

I think it worked pretty well in this case because there was a substantial agreement among all the various constituencies on the importance of the two central recommendations. Now, there's a thousand and one other issues brought out in these reports, specific things, but I think the committee served to identify the two things that were most important, that everybody could agree on, and generate some momentum behind those.

Fire Protection: Review of State Responsibility Areas

Vaux: You asked about fire protection [in the interview outline]. That was one contrast between the board experience when I was on it as an active member and my earlier experience that I mentioned, when I was an honorary member of the board in the fifties and sixties. At that time a great deal of the board's concern was with fire protection issues. During this later work with the board, fire protection was much less important. Politically, the issues involved in forest practice regulation were more predominant in a general political sense than the fire protection issue, so the board spent less time on fire protection than it should have, probably.

But during this same period of time, 1981-82, two issues in the fire protection area came up, to which the board gave considerable time and which were quite important. One of the board's functions in the fire protection program is to designate on maps areas of state responsibility for wildland fire protection. Under the fire protection statute, the state assumes responsibility for providing basic fire
Vaux: protection on all lands outside of incorporated places where there is timberland or associated grazing and chaparral lands of primary watershed significance.

In other words, the fire protection justification, justification of spending state money for fire protection even though it's on private land, hangs on the importance to the state of the timber supply—to protect that—and also the importance to the state of watershed protection. So, in order to determine what those lands are, somebody has to go over the land acre by acre, essentially, and determine which lands are of primary timber and/or watershed importance.

In general, this means upland areas. In other words, the Central Valley is not in incorporated cities, most of it, but it's not of primary importance for watershed protection. So there are criteria developed as to slope, erodibility, settlement, and things of that sort, to separate out the state-responsibility lands from the local-responsibility lands. On the local-responsibility lands, then it's the local government and the individual citizens who have to bear the fire protection cost.

The Board of Forestry is supposed to review this state responsibility classification periodically to revise it in terms of better information, evolving patterns of settlement, and this kind of thing. The board, because it was so preoccupied with forest practice regulation, hadn't done that for a number of years. So in '81 and '82 we went through a considerable process of reviewing the entire state classification thing.

That, in general, was not a matter of major controversy. In some places there was a little pulling and hauling, but they were pretty localized adjustments, and there were no major problems with that reclassification. Actually, the reclassification didn't change much. Some areas were taken out where previously the state had been providing fire protection, but some areas were added. This left the situation as far as total acreage was concerned at about the same level, thirty-two or thirty-five million acres of land under state responsibility.

**Orange County Fire Protection**

Lage: Somewhere in the notes that I took on board minutes I had down that Pesonen mentioned this was an area where the department and the board disagreed. It might have been a particular issue of fire protection.

Vaux: I think this probably refers to the Orange County situation. That's the other one I was going to bring up because that came along about the same time. This requires some digression, really, into the nature
Vaux: of the wildland fire protection system. It's a very complicated administrative matter because you have all kinds of rural fire departments. You have, first of all, the state, which is one of the biggest fire departments in the world; the State Department of Forestry is a big fire department. In terms of manpower and budget, that's the department's biggest function by far. Then many counties have their own rural fire departments. In California, the federal government, through the Forest Service, has a major wildland fire protection system. The city of Los Angeles and many other cities have wildlands inside the city limits which they protect. So it gets to be very complicated to coordinate all this.

Moreover, in the interest of cost-efficiency and eliminating duplication of facilities, the state, federal, and local governments contract to perform certain fire protection services for one another. For example, County A may decide to pay the State Department of Forestry, under contract, to provide protection for all county responsibility land in its jurisdiction. Alternatively, if County B has a wildland firefighting department to protect wildlands for which the county is responsible, the CDF [California Department of Forestry] may contract with that county and pay it to protect the state responsibility land there. Similar agreements between CDF and the U.S. Forest Service also exist. Over the years, I think quite an effective system of coordination and cooperation of all these agencies has developed.

Now, the thing that happens everywhere is that as of some given time, let's say 1950, there's a large state responsibility area in a county, and the state has in place a fire protection organization to protect that state responsibility area. The state's responsibility for fire protection on state responsibility areas is limited to protecting the wildlands. The state doesn't have any authorization to spend any money to provide structural fire protection. Now, de facto, the state can go in and put out a fire in a house that happens to be built in the wildlands if in its judgement there's danger of the fire in the house spreading to the wildlands. But so far as authority to spend money to protect that house itself goes, there is no authority in the State Department of Forestry to spend money to protect the house.

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Vaux: As settlement increases, as it has in all these wildland areas, then there are more and more houses out there, and the problem of where wildland fire protection stops and where it becomes an urban fire protection problem, where the state has no authority to spend money, and the state shouldn't be involved—where that begins is not by any means a clearcut line. It has some further complications in the sense that all the doctrines and even the equipment and the type of training given to firefighters is quite different, depending upon whether you're talking about wildland fire protection or urban fire protection.
Lage: It's not just a question of money, but actually the way the fires are fought.

Vaux: Yes. In other words, the basic doctrine in wildland fire protection is that in a case of a conflagration, you'll give up ground in order to stop the fire. But you don't in urban fire protection, give up one house in order to stop another one from burning. So you had the anomaly down in many of the southern California areas, where the wildland fire doctrine would call for setting a backfire from a ridge top to keep a fire from coming up and going over the top, but if there are a half-a-dozen million dollar movie star homes along there, you aren't about to set a backfire. So this kind of conflict emerges and still goes on.

Lage: That must have occurred in the Santa Monica mountains.

Vaux: Sure, sure, that's an example of it. All right. Now, against that background, what happened in Orange County was that a county that was completely non-urbanized in the 1950s, where there was a very large CDF commitment, and where the rural land was all protected by the CDF, evolved from 1950 on to 1980 to the point where CDF was supplying eighty percent of the fire protection to the county to protect local responsibility areas.

Now, CDF was being reimbursed for that, financially, but rather than start its own fire department as Los Angeles had done decades before, Orange County saw fit to continue to hire the state and pay the state to provide the fire protection facilities to the urban concentration there. So much so that the Orange County unit of CDF had over eight hundred employees at the time this came about, which was something like twenty percent of the whole CDF work force statewide. And they were predominantly engaged in urban fire protection.

Lage: I guess there wasn't that much wildland left in Orange County.

Vaux: There is quite a lot of wildland left there, but it was a case of the tail wagging the dog, in the sense that it would have been more rational to have, as you do in Los Angeles County, a city urban-based fire department that then was paid by the state to protect the wildlands on the edge, you see. The reason that this became politically a very tense issue was that the wage scales and the terms of employment for the firefighters are different between the urban firefighters who belong to one union, and the CDF firefighters, who belong to a different union.

CDF, for its own reasons, had always fought to maintain and got agreement from its union to maintain a longer work week. I think the salary levels were reasonably equivalent. (There is a lot of variation between individual municipalities and what their salary levels for firefighters are.) There were some differences in salary levels, but work week and fringe benefits were quite a different thing.
Vaux: The urban firefighter's unions, seeing this big block of people occupied in what they perceived as essentially urban firefighting, but not conforming to the general work rules of the urban firefighters elsewhere, brought political pressure to bear on the Brown administration to eliminate the CDF presence in Orange County. That issue arose right after Dave Pesonen became director of the Department of Forestry, and he had to preside over that operation.

The board, thinking of its responsibilities for wildland fire protection, saw this as an undesirable step, to eliminate Orange County from CDF, because here were twenty percent of the whole CDF staff. One of the economies that CDF gives you is that it is a state-wide organization, and therefore this permits resources and manpower to be shifted on an emergency basis from one part of the state to another, to meet emergency demands. Because it's all within one organization, it's fairly easy to do it administratively.

Whereas if you have totally separate and independent organizations, you don't have that flexibility to move manpower and equipment. Indeed, the technical situation is one where the crunch in the fire season in northern California usually comes in August and September, and the crunch in southern California is October and November. Quite traditionally, almost every year, in August and September there may be CDF forces normally based in southern California sent into the northern half of the state to help take care of emergency situations there. Then in October and November, the reverse takes place and northern forces are moved south to deal with emergencies down there.

So if you removed twenty percent of the manpower from that system, it would be a concern. That was the basis of the dispute between Pesonen and the board. It wasn't over any fundamental difference in view of what the problems were; it was a beautiful example of the old business that any policy decision involves competing values, and how do you weight the competing value schemes? Most political controversy is over how you weight things, and the board wasn't putting much weight on the politics of the firefighter's unions, and was looking at the single criterion of cost effectiveness in running a big state-wide organization. Pesonen had to look not only at that but also at the political pressures arising out of this union thing.

Lage: How did that get resolved?

Vaux: Orange County went out. The board eventually passed some guidelines, I think at Pesonen's request, for ongoing review of other counties. As population grows, this same situation is likely to arise in other areas. I don't think it has yet arisen in any other areas, but it's the kind of thing that you would expect to arise as a result of development.
Lage: Did the Department of Forestry decrease its staff by twenty percent?

Vaux: There was a very complex administrative scheme for making the transfer. Individual employees, I think, were given some right of election of whether they wanted to go to the new Orange County Fire Department, and they were given certain guarantees if they did that, or they were transferred elsewhere in the state organization if they preferred to remain with the state, as they might well have done because of seniority and that sort of thing.

But there was an administrative agreement worked out by Pesonen and the Orange County people. Orange County, of course, was the real opposition to it, because they were going to have to pay more for their fire protection.

Lage: So the county administrators didn't want to give up the state protection?

Vaux: The county administrators and the county taxpayers. Their opposition to the transfer was a pretty clear justification for the transfer. There wasn't any reason why the state should subsidize fire protection in a place like Orange County.

Lage: Was the board the one that would be making the decision on that issue?

Vaux: No, the board would not make the decision, except the board was responsible for policy guidance on the thing, so it had to express itself. As its policy objectives were to run an effective system of wildland fire control, this issue of the resources available to the Department of Forestry and the flexibility with which it could reallocate those resources on an emergency basis was a central policy issue for the board. So that automatically put it in opposition to the transfer of Orange County out of CDF, regardless of what the other considerations were, because those other considerations weren't very important to the board's legislative mandate.

Urban Expansion in Wildland Areas: Increased Fire Hazards

Lage: And yet one of their jobs was to review the overall situation and to adapt the policy to the realities of urban growth. That was part of the responsibility too.

Vaux: The board doesn't have any statutory responsibility to adapt its policies to urban growth. This is one of the ongoing problems of the board in the fire protection area, that it has no control whatsoever over any kind of urban influence, including growth that affects wildland fire protection, but it has to adapt to it. There are many examples of
Vaux: that. For example, a lot of subdivisions are put in outside of incorporated limits and often in the wildland areas. You see this going on all over the state. One reason they're put there is that county code requirements on things like fire protection, road access, water development, and this kind of thing, are often less stringent than urban code developments.

People can go into the unincorporated area, get permission to put in a subdivision, put in dead-end streets, not put in sufficient water development for fire protection purposes, and do a whole lot of other things that greatly increase the hazard to the wildland areas. Because most fire starts are man-made or woman-made. So when you introduce a resident population into a wildland area, then your fire hazard is greatly increased. If at the same time you don't build in any facilities or resources to intensify protection, you face the state with a problem. But the board has no effective control over that process of urban expansion and subdivision into the wildland areas.

The only thing the board can do is to yap to the legislature about what a serious problem it is, and the board does that regularly. But the response to that is very glacial. CDF tries to carry on a program of work with local authorities to get a control on this, and this is effective in the sense that over the years the local counties have, many of them, adopted much more stringent controls over this. But that's a very slow process. The board and the Department of Forestry are inevitably ten years behind the process. The problem stays there, because the board hasn't any machinery to control that kind of thing, and all it can do is yak about it.

Probably the best example of a specific difficulty is that, until the last couple of years, there has been no statewide legislation banning the use of wooden shingles and shakes as a roofing material in these situations. It's an interesting problem in social psychology because people are totally irrational in how they look at this problem. They'll go out and they'll put a shake roof on the house when everybody knows, including the builder and the guy who's putting up the money to build the property, that that's creating a fire hazard. It's the irrationality of people's behavior in the fire protection context which makes it so difficult to get what would seem to be rational regulations.

Lage: Of course, the basic irrationality is on the part of the consumer who buys it.

Vaux: That's what I say, and they're the voters who could support remedial legislation. The case that always fascinated and amused me is my very good friend, John Zivnuska, who in the course of his marvelous teaching career, I think, taught virtually every subject in the forestry curriculum. He was the kind of person who could do that effectively. For many years he taught the course in fire protection on the Berkeley
Vaux: campus and used to inveigh about the sheer stupidity of people who built homes in brushy areas at the end of dead-end roads, where the property was not only at stake, but their life might be at stake if a fire swept in there, and with a dead-end road, they couldn't get out.

Here, fifteen years ago, John decided to buy a new home, and so what does he do? He buys a home in Orinda, at the end of three miles of the narrowest and crookedest dead-end road that you ever saw, with chaparral towering over the top of the house.

Lage: Does it have a shake roof?

Vaux: I can't remember if it has a shake roof or not. So I, in a friendly way, sort of chide John about this inconsistency from time to time. He sort of grins, and says, "Well, I have a swimming pool, and I figured I can stay under water in the swimming pool, and the fire will go by." In the face of that kind of a public attitude—where people are willing to take risks, even though they know they're there, that in some sense are irrational—there's always the "It won't happen to me" syndrome. It becomes very difficult, then, to get a hold on that process in any really regulatory sense.

That was the kind of issue that the board looked at almost every year. We'd take a field trip, see this subdivision thing and pay attention to fire problems, but the tools available to the board were very feeble tools. So I don't mean to play down the importance of the fire protection responsibilities. I guess what I would say is that the board paid a lot of attention to it, but you have a massive system in place, and most of the variables that could now be modified in that system aren't really subject to board control. Its actions are often limited to calling attention to problems. Except for this classification of state responsibility areas and appeals to the legislature to require fire-proof roofs and that sort of thing, there's not an awful lot the board can do at this point.

State versus County Control over Timber Harvest Regulation

Vaux: During the final six months or so of my service on the board, the new issue was emerging of state versus county control over timber harvest practice regulation. The event that led to the court's declaring the original 1945 Forest Practice Act as unconstitutional and which opened the door to the adoption of the Z'berg-Nejedly act was a lawsuit in San Mateo County where the county had tried to control logging.
Vaux: The courts had sustained the loggers' plea that the 1945 Forest Practice Act made the state the supreme authority, and the county couldn't pass additional regulations. As a result of an appeal of that court decision, the appellate court, sustained by the supreme court, declared the original Forest Practice Act unconstitutional. That opened the door to Z'berg-Nejedly, and Z'berg-Nejedly explicitly gave the counties authority to pass regulations that were more stringent than the state rules.

This was done in a number of the urban counties. In counties like San Mateo and Santa Cruz, the county regulations worked reasonably well. They were very constraining on the operators down there, but the good operators there found a way to live with them and get along with the communities. But there were some other counties, like Marin and Santa Clara, which used that regulatory authority in a way that precluded any logging whatsoever.

This I always thought was interesting, because the industry people all saw the board as dominated by anti-industry environmentalists, but environmentalists on the board all agreed with the industry that in the 1980s urbanization was spreading, and if you maintained these county controls used in this severe way, it meant that more and more and more commercial timberland was going to go out of the commercial timberland base; it wouldn't be able to be used for timber growing and would thus be pushed into subdivision.

So the Brown board agreed with the industry and supported the industry's effort to get a piece of legislation called SB 856, by Senator Keene, passed. That legislation changed this set-up and forbade the counties to pass any more regulations of their own on logging but required the board to receive requests from any county board of supervisors for more intensive regulation and to adopt regulations proposed by the county as special rules for that county if those regulations met two tests: one, they were justified in the interest of public health, public safety, and public welfare by conditions in the individual counties. And two, the rules didn't contravene the purposes of the Forest Practice Act. In other words, they didn't actually prevent logging. That was the basic gist of the SB 856 law.

What it did was take the power out of the hands of the county and restrict it to the board, but at the same time the board was forced to go into that county and hold hearings there and use that process to educate people a bit as to why properly controlled logging was a legitimate use of the land. So it changed somewhat the political foundation of the logging activity in a county.

It's still premature to see how that's going to work. The board has subsequently, since I got off it, adopted such rules at the request of seven or eight counties. There's been a lot of litigation surrounding
Vaux: this, challenging the validity of the SB 856 act and challenging some of the board's procedures. In general, the courts have sustained most of what's been done, but it's still, I think, premature to know whether that's going to continue, whether that will be a permanently viable solution. I think if it's properly handled by the board, it probably can be a viable solution. It would forestall some problems that otherwise would develop as urbanization increases in Sonoma County, up in the foothill areas in the Sierras, and so on. There's going to be more of this same kind of resistance in urbanizing areas to having logging going on there at all.

There's a process of education necessary on both sides--one on the part of the loggers to be a little more responsive to urban concerns; and the other on the part of the residents to recognize that, if it's properly regulated and controlled and carried out, forest management and logging on these areas is to their interest, because of people's interest in open space. Forest management is about the only kind of open-space use that can be practiced throughout the coast range and throughout the Sierra timber belt that will yield an economic return. You just can't visualize the public raising enough money to buy all that land and put it in parks. Something has to go on there if it's to be retained as open space.

Lage: So, if it's not forestry, it's subdivisions.

Vaux: That's right. But most people in the urban areas don't understand that. By putting the power in the hands of the Board of Forestry to make the local rules, it permits the board to go in and make that argument. The board, having a majority of public members, can make that argument with more credibility than the industry can make it. And under county control, the industry is the only group with an incentive to make the argument, and they just aren't credible when they make it.

Lage: During the public hearing, then, does the board have much of an opportunity, or take the time to explain to the audience--

Vaux: Certainly. Sure, sure.

Lage: Responding to individuals?

Vaux: Yes. And seeing to it that, in the public reports and other documentation that is prepared now in this involved process of making regulations that we've talked about, seeing that that argument and the basis for it and so on gets into the public reports.

Lage: That's interesting, because I think of the public involvement process as being a process of getting public opinion to the decision makers, rather than the reverse.
Vaux: Well, I'm going to talk some more about that. But, quite obviously, if public involvement is to serve what I think is its appropriate political purpose, it has to be a two-way street.

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Lage: I was asking you off the tape, and now we're going to repeat a bit of it, about the problems in the Santa Cruz area.

Vaux: Santa Cruz was the focus of many aspects of this urban versus forestry interface, for a variety of reasons that we don't need to detail here. But one of the things that board did even prior to SB 856 was to modify the Southern Area Coast District rules, which were the Forest Practice rules that applied roughly south of the Russian River, or south of Sonoma County, more accurately.

Those rules, which existed in some form even under the old Forest Practice Act, had banned clearcutting in the southern area of the coast district. The foresters down there—who are very capable people, among the most capable ones we have in the state, particularly in dealing with a very, very difficult political environment in which they had to work—convinced the board that if the absence of clearcutting were sustained for another ten or fifteen years, then there was significant danger of considerable areas being completely taken over by hardwoods, simply because with no clearcutting there was no way you could open up the vegetative canopy sufficiently to get regeneration of Douglas fir and redwood. So this board, so criticized for being adverse to industry and far-out on the environmental side, voted to permit small clearcuts under the Southern Area Coast District rules. Admittedly, they were very, very small clearcuts. Cecile Rosenthal, who was our most committed environmentalist, saw the wisdom of that and voted for them, which I always thought was a tremendous indication of her willingness to understand the problems and deal with them constructively.

A lot of the hearings on that issue were in Santa Cruz County, where most of the forest land concerned was at that time.

Lage: And was the populace in Santa Cruz pretty much opposed to that, or did you have an opportunity to talk to them?

Vaux: The hearing served the purpose of trying to educate them. Now, you don't educate somebody just by having a hearing, and they come in and you say, "This is the way it is." That's not the way it operates. But I think unless you do go in and explain the rationale, then the education process never begins.
Review of Some Major Issues

Vaux: I think that concludes the sort of detailed historical review. I'd like to comment a bit on some of the summary kinds of issues that you pointed out in your outline. Perhaps I'll just take them, for reasons of timesaving, in the order in which you list them here. That will minimize, at least, my confusion.

Lage: Some of them we've already covered, I think.

Vaux: We have covered in detail, but it might be well just to make a comment or two on most of them.

As far as the Redwood National Park is concerned, although it took a lot of the board's time the first two years I was on it, I would say that that was simply an incident. It really had nothing to do with the fundamental policy role of the Board of Forestry. Essentially it was an attempt by certain groups to use the board's authority for other objectives besides the purpose for which the board really existed. So once the redwood park controversy was settled, we paid no more attention to Redwood Creek whatsoever. That's why I say it was an incident, not an issue.

Water quality, on the other hand—even though we made an exhaustive review of the rules and put in place a new set of rules with more explicit criteria for the protection of water quality, and in this sense that current phase was settled—it's an ongoing issue. Now the Water Quality Control Board and the current Board of Forestry have an agreement for monitoring how the new set of rules works, and they'll be back at that, I'm sure, when the monitoring period's over.

The whole thing will no doubt have to be rehashed again because that's a conflict in values. As personnel change, as people's perceptions of values change, people are always going to be arguing about whether the balance is correct between water quality and other kinds of values.
Vaux: Much the same thing might be said about the matter of board procedures to provide a functional equivalent to the environmental impact report. Again, we have a modus vivendi, a current set of rules that seems to work, but it's only a matter of time before perceptions change and other things will have to be done to tighten up or relax some aspect of those procedures. No political solution ever endures indefinitely. It's not in the cards.

I would say the same thing about the role of the professional forester in administering the Forest Practices Act. I think there's been evolution of that just since the Deukmejian board has come in. Simply because forest practice regulation by regulatory prescription is so cumbersome and, when applied to the tremendously varied situations that you find on the ground, so inefficient, I would expect that there'll be more and more a move toward giving the registered professional forester more discretion, but at the same time make him more responsible for what he does--because those two things have to go together.

I would expect the movement to go in that direction in the future, because that's a way of clearly improving the regulatory process from everybody's standpoint--if you give the person who knows the most about it and who's there on the ground the latitude to do the proper thing. The difficulties are in how you define this responsibility and how you assess this liability. Those are real problems, and progress in the direction of giving the man on the ground, or woman on the ground, more say in the thing depends on finding ways to solve the problems of responsibility versus liability.

Lage: Did you skip over the outline item on special treatment areas for the coastal zone?

Vaux: I haven't said really anything about that because I don't see any really special issues in there. The area involved in special treatment areas for the coastal zone is really very small, very small.

Lage: So that wasn't a major issue?

Vaux: We spent a lot of time in devising the first rules, but with minor exceptions I think those have been in place without any particular hassling since.

Lage: Okay, that's enough said then.

Vaux: On the wild and scenic rivers thing, I don't think it's ever had very much impact. I don't see anything in the wild and scenic rivers designation that greatly affects forest practices on private land. Some additional consideration to environmental and scenic considerations is given within an area on either side of a wild and scenic river. But
Vaux: again this is a very limited area, and it's kind of a special-case situation. Again, they're issues that cause a lot of excitement, but I don't think they affect most of what goes on on 90 percent of the privately-owned commercial forest land.

Lage: Didn't that cause excitement among industry, afraid that they were going to have more controls?

Vaux: Oh, a lot of excitement among the industry, yes. But it never appeared to me that the exercise of additional controls on forest management came very close to much reality. I think the main focus of the wild and scenic rivers designation on private land, or on any land, has to do with the prevention of construction of new dams. I think that's the major thing.

I think I've said enough about revising the board rules and department procedures. There are some very important developments that took place there, but I think I've called attention to those, in terms of the emerging role of a board staff, the impact of AB 1111 on the actual procedures of forest practice regulation. Those impacts were profound and terribly important, but other than pointing that out, I don't see much more to say about it.

I've talked a little bit about the Santa Cruz rules controversy, which I would define really as the urban versus forestry interface conflict, because it wasn't just Santa Cruz County. As a matter of fact, if Santa Cruz County had been the typical situation, SB 856, I suspect, would never have been passed because there wouldn't have been any need for it. The industry and the local people had come to a not necessarily wildly enthusiastic joint view on the thing, but they arrived at a modus vivendi so that logging was going on, there weren't too many screams, and complaints were resolved to a reasonable degree of satisfaction. It was the situation in some of the other urbanizing counties that led to 856, particularly Santa Clara and Marin.

Public Involvement: Defining the Public Interest, Improving Public Awareness

Vaux: Public involvement--I would like to say something about that. People have different perceptions about what public involvement ought to mean and what it does mean. I have some very strong personal views on that. I think some people think of public involvement as kind of arriving at decisions on a majority-vote basis. Maybe the model would be every question decided by the equivalent of a New England town meeting.
Vaux: I think if that concept of public involvement were widely employed, it would be a total disaster, simply because you would never achieve the level of common understanding about the real nature of problems to arrive at a solution. Now, you can do this with the school board, where every family knows quite a lot about what's involved, and has an immediate stake in what's involved, and is willing to devote a lot of time to resolution of whatever problems are apparent. That kind of thing you can deal with on a town meeting basis. I don't think you can with the forestry issues.

There, the delegation of authority to make decisions to particular bodies or particular individuals to my mind is not only justified but essential because that's the only way you can arrive at decisions that will be made by people who are reasonably well informed on the breadth and complexity of the problem, and who have the time to give to analyzing the specifics and try to make some reasoned judgment about it. Most forestry issues will never be like school board issues in these kinds of dimensions.

That doesn't mean that there's no role for public involvement, but the role of public involvement is quite different. In my own mind, it runs to one's definition of what's in the public interest. I don't want to get into a long diatribe on the public interest. You and I both know what the public interest is.

Lage: Of course. [laughs]

Vaux: The only difficulty is we probably don't agree in any given case as to what it is, and if we had ten people here, why, we'd have ten different definitions of it. So the operational definition of the public interest as I perceive it is what comes out of the decision-making system, the political system, if you like, with two major qualifications. One is that the political system works reasonably well, in accordance with due process in the constitutional and legal sense. In other words, everybody has a chance to have his say; there's full information disclosure; there are not closed door kinds of things--this aspect of due process.

The second constraint is that what comes out of the established decision-making institutions reinforces (or at least doesn't undermine) public acquiescence in the validity of those institutions. In other words, if the government does something that the general public regards as outrageous to the point where there's a citizen's revolt, and you get the system changed, then obviously that action was not in the public interest. But if the government does something that may be unpopular, and everybody sits around and grumbles maybe about different aspects, but they aren't sufficiently unhappy to modify the decision-making system, then it seems to me that's about as close to a public interest identification as you can get.
Lage: So if the public is not aroused by a certain aspect, as, say, they weren't about forestry earlier on, before new Forest Practices Act, then you're assuming that whatever the board decided is in the public interest.

Vaux: I'm saying that's as close as you can come to a defensible definition of the public interest. The way I put it formally is that the actions produced by the process have to be validated by general acceptance by the public at large. If they're not validated by general acceptance, then obviously it wasn't in the public interest, but if it is validated by general acceptance, then where is there any basis for saying, "This is not in the public interest?"

You and I might disagree with a government action and say that it's totally wrong, but if the public isn't excited enough to do anything about it--

Lage: I'm just thinking of the case where you simply had an ignorant public. It wouldn't hold.

Vaux: All right, this goes to the role of public involvement, then. In order to maintain the validity of this public acceptance, there has to be public involvement so that at least a significant part of the public understands what the issue really is. And so that the decision makers have an opportunity to understand what it is that the public is upset about. If you don't have that two-way flow, then this concept of the public interest would break down.

That, to me, is the important role of public involvement, but it's not in the sense of the public participating, in the vote-counting sense, in the making of the decision. It's a process whereby the decision makers can become more keenly aware of what the viewpoints of the public actually are, and the public can become aware more keenly of what the full dimensions of the problem are. At least that's the only sense in which public involvement seems to me both essential and desirable.

I just can't believe that public involvement, in the sense of having a public hearing and counting noses, makes any sense.

Lage: Are there those that you were involved with who felt that counting noses was the way to go? Or is that a common attitude?

Vaux: I think it's a common perception. I think anybody who's had very much experience in observing this kind of process wouldn't accept it, but I think people who don't have much experience with the process tend to think of it as vote counting. You get that in various contexts: I think I mentioned that at one stage our District Technical Advisory Committees were very unhappy because they said, "The board's not taking our advice." They felt their vote wasn't being counted.
Vaux: I think this is an initial reaction of everybody. How can the board take everybody's advice? They can't. They have to be influenced by everybody's advice, but what they come out with may not conform to the advice of any one of these constituencies. I don't think there's much understanding of that very qualified and relative nature of the political process. Simply because it's the confrontational aspect that generates the newspaper publicity, people think of political action as being primarily "either you're for me or agin' me. And if you aren't for me, you are agin' me." I think that's devastating to any kind of stable political action.

Lage: Do you think some of these rules that evolved around public involvement--such as the one you mentioned where you have to respond to every issue brought up--were beneficial? Or does it just become so cumbersome that it interferes with--

Vaux: I think it may have gone too far, but I think it's better than no response at all. Because at least you're giving the person who raised the question the satisfaction of feeling, "I made my suggestion and they looked at it, and I may not agree with their response, but at least we gave it a shot." This is where the public perception of the nature of the body is terribly important to how this process works.

Now, when I came on the board, the Board of Forestry, I think, was seen by large numbers of environmentalists as an adversary. The DTACs, particularly the North Coast DTAC, were perceived as even more of an adversary by the environmental community. One of the things that our board tried to do was to change that by being open. That, I think, brought some result, and I think I can point to one major and one minor piece of evidence. One of the strong environmentalists who watched the board carefully and served on the DTAC for a while, and so on, at one point put an article in one of the environmental journals--I don't remember which one it was--but commenting on what was happening on the board, and said, "This Board of Forestry listens." I mentioned earlier the Calvo bill, where there was provision to do away with the DTACs in about 1978. That provision eventually died, and we haven't heard anything about it for a number of years now. I think it was because there was a definite effort to convey to all the constituencies, "The board and the DTACs are willing to listen. They aren't going to always agree with you, but they will listen," and I think that leads to a more satisfied attitude on the part of the participants.

And it's terribly important if the process is going to work in the public interest. If you operate as a closed door organization, then you're bound to generate resentment just because people don't know what's going on. I suspect that we'll draw back from some of the more detailed requirements, some of these administrative procedures, but some over-balancing may have been necessary initially to create a different public perception of what was going on.
It does seem quite a large change in the last, say, twenty years in how we've gone about public decision making, across the board in many areas.

Oh, yes, I think there's been tremendous change, tremendous change. I think that's maybe one of the contributions of the environmental movement, because entirely apart from the environment I think it's opened up a lot of political processes and made them more sensitive.

I don't have too much to say about relations with the Department of Forestry. I always thought they were very positive, both with Director Moran and Director Pesonen. I had no sustained contact with Director Partain, so I don't have any basis for commenting on that. In the nature of the case, there are a lot of reasons for the department and the board to get along well together. I suppose in part that stems from the fact that the board's budget is embedded in the department's budget. Not that I've ever known of a director to misuse that and try to influence the board with the threat of budgetary retaliation. On the contrary, both the directors that were in power at the time I was involved bent over backwards to make facilities available to the board and that sort of thing. I thought relationships were close.

I've talked about some specific relations with the legislature. I think some boards may use the legislature more effectively than we did.

You mean, in the past?

Let me change the phraseology and say, some boards may have a style of directing more attention to legislative relations and trying to achieve objectives through legislative action. I didn't feel that style was appropriate at the time I was with the board because in the first six years of the 1970s, which were the immediate predecessor years and the early years of my association with the board, we'd had an absolutely astonishing panoply of new forestry legislation. I don't know of anything like it in the history of forestry anywhere, with such a diversity of highly significant legislation.

The registered professional forester's law, the Z'berg-Nejedly law, the Forest Tax Reform Act, the Forest Improvement Act, the FRAP Act; that's an incredible amount of legislation. And to assimilate that and to make it work smoothly I thought was the major objective of the board, not to run around and propose a bunch of new legislation. I thought that was all we could digest. So, except for the specifics that I've
Vaux: mentioned, I think our relations with the legislature were not a particularly significant part of the board's activities in that particular period. In a different historical era, it would be different.

Brown's Outstanding Appointments to the Board##

Vaux: You asked about managing the board and its members. I think I've already commented on most of that. I'd just make the general statement that one reason I look back on my experiences with the board as a very important one for me and a productive one for me was that it was a remarkable group of people, as individuals. I guess I want to pay tribute to every one of them as an individual because they were all dedicated. None of them shirked any of the work. Each contributed in his or her own way to advancing perspectives that the board had to take into account and had to know about. So I want to pay tribute to those people as individuals, but also I think there's a little item here that ought to be said in deference to Governor Jerry Brown, whose appointment policies have been widely criticized in a number of areas.

In my opinion, he did an outstanding job of appointing the kind of board that he thought there ought to be, and the kind of board I thought there ought to be. When I talked to him before he appointed me, he said, "My idea of this board is that it's a nine-person board; there ought to be four people representing an environmental point of view, four people representing an industry-landowner point of view, and somebody in the middle." Well, it wasn't quite that precise, but it wasn't a bad approximation.

The thing that impressed me was that each of those individuals, regardless of where they came from in the political spectrum, were committed to not only representing their own view, but trying to make the process work. I suspect that may not always be the case in political life, and I think that's very important.

Lage: I think it's extraordinary, because there are tremendous demands on the board.

Vaux: Yes, there are. There's some asymmetry in the relationships of the board to the industry versus the relationship of the board to the environmentalists. The industry is highly structured politically and economically, and there are a few recognized people who serve as spokesmen for the industry as a whole, and even though the industry is never monolithic in its view on things--there are always differences of opinion within the industry--they're structured so that they tend to minimize public discussion of those differences. You feel you can
Vaux: get a sense of what industry believes in by contact with a few of those spokesmen. And, of course, some of those spokesmen were on the board.

The environmental group, as I perceive it, is much less of a tightly knit group. It's a whole population of organizations with somewhat different objectives. There's no one who can really speak as a spokesman for the environmental group in the sense that certain individuals can speak as spokesman for the industry group. So this makes a definite dichotomy in the way a body like the board can and does operate in connection with these things.

Lage: Do both groups have in common the belief that--I know the environmentalists often do--their point of view represents the public interest? Is that true also of the industry?

Vaux: Oh, sure, sure. I wasn't being facetious when I said, "You know what the public interest is, and I know what the public interest is, and we just don't agree." Certainly. Each group thinks its view is in the public interest. That's part of the problem of defining what the public interest is. I must say, some groups are more sanctimonious about contending that they represent the public interest than other groups, but that's merely human nature, too.

The Regulatory Process in California and Other States

Vaux: On that final reference in your outline, a general reflection on the influence of the California board and California forest practice rules on national trends, I think if there is any influence it's totally indirect. I think in most other states, at least the foresters and the industry look at California and hope and pray that what has happened here doesn't happen to them. But I guess I think the California example is useful because the trends that have brought about more rigorous regulation here undoubtedly will develop in other areas as well.

As that period emerges, then the California example is already in place, and if it's properly written up and publicized, why, then our experience, both good and bad, can be drawn on, and I think it will be useful experience. Because I suspect we encountered situations that will in the future be encountered in many states, with some modification to our peculiarities here, and people will be able to learn a little bit from the mistakes we've made and the successes we've had.
Lage: Is this the direction that it's moving in? Do you think there's going to be more regulation by other states?

Vaux: I would expect so because public intervention in these matters, as I see it, is a function of population pressures. So, as population pressures expand in any place where there is forested land, you're going to get increasing tensions, just the way we have had them here. But I think in some sense the California situation is a unique one, because we have geographic conditions, we have demographic conditions, we have economic conditions affecting land use and forest industry which I won't say are unique, but the combination of those things is quite different from the combination in other states.

Relatively speaking, we have both more urbanization and a greater proportion of our forest area dedicated to wilderness, than I think any other state. I mean that in relative terms, not absolute terms. So this means that we have present in the state both the urban core and the frontier and everything in between. So this tends to mean that we have a more diverse array of problems politically and economically and otherwise than most states. And we have to deal with all of those, whereas most states don't have to deal with some of them.

I think the regulatory process in California is still very much in transition and probably always will be. I think that's the nature of politics: it's the process that's important, not the particular output of the system at one given time. Is it a healthy, ongoing process that's able to moderate and resolve recurring problems? That's the way the policy ought to be judged, not on whether it came out with "the right answer" on this particular issue.

Lage: Is the Deukmejian board going through the rules as you did and revising?

Vaux: They've done, to my mind, astonishingly little of that; astonishingly little. Also when I was on the board, we fought for certain further changes in the system, such as permitting, in a fairly general way, the forester to suggest a prescription for handling any area of forest practice rules, silvicultural, stream protection, road construction. We wanted a system where the rules would be there, but there would be an opportunity for the forester to prescribe an alternative which he would then have to justify in terms that his alternative would do at least as good a job of protecting the values the statute was supposed to protect as using the rules.

We were convinced that there were some situations where it was possible for a forester to do that.

Lage: Build some flexibility into it.

Vaux: That's right. Then his alternative would have to be accepted by the director of the Department of Forestry as in fact being a proposal that would achieve the objectives as well as, or better than, the rules. In
Vaux: that case, the timber harvest plan could substitute the forester's alternative for the forest practice rules. We saw that as a way of getting this flexibility that I spoke of earlier.

Our board was quite active in trying to promote that notion of a forester's alternative. We achieved it only in a very, very limited sense. But there was a lot of opposition to it, both from some environmentalists and strangely enough from many people in the industry and the foresters themselves.

Lage: Would that be something you'd write into the rules, or would it have to be legislated?

Vaux: It was something you could write into the rules, we thought. As I said, as long as our board was in power and authority, there was opposition from both these sources. Since then, much of that has been adopted by the new board.

Another thing was agency appeal. The first step in the appeal process in connection with the decision on a timber harvest plan is asymmetrical. If the plan is denied by the director, the person applying for the plan can appeal to the Board of Forestry, and that's the first step in the appeal process for the decision on timber harvest plans. If the director approves the plan, there is no appeal to the board.

The only appeal an environmentalist can make, if the environmentalist doesn't like the plan, is to go to court, which is more expensive. I always thought that, just in principle, the existence of an asymmetrical appeal process wasn't very good politically. I also thought you shouldn't open up the appeal process to anybody who came down the road with a chip on his shoulder and objected to something, but that there ought to be some way where legitimate concerns about approval of a plan could be aired.

The industry fought that lock, stock, and barrel. But shortly after the new board came in, why, there was statutory language developed—I think it's now in effect, I would have to verify this—but at least there's now support for a limited appeal process, particularly in the county situation, where not anybody in the county, but the board of supervisors in a county that has special rules adopted by the board pursuant to SB 886 can appeal an affirmative decision on a timber harvest plan.

Lage: Of course, when we talk about the new board, that's a gradual process of replacing the board, isn't it? There are staggered terms.

Vaux: Yes, yes. And it may change as that process goes on, but our board advocated revision of the basis for disciplining RPFs, which required statutory enactment. Again, it was opposed by a variety of groups. Once we were out of the way, why, that's been brought about to some degree in the statute. It makes a difference who suggests something.
Mutual Suspicion, Deterrent to Wise Regulation

Vaux: I've said that, in my view, the regulatory system in California is still in transition. The present method is terribly cumbersome, I think everybody admits that. I think a future role of the board that's very important is that a high quality board can, over the years, do some things to make a climate where there's much less suspicion between the constituencies than has characterized things in the past and that now exists.

If you had less mutual suspicion, then you could do things more flexibly, less costly, in more straightforward ways. A lot of constraints are built into the system now because people don't take the opposition at face value, and they build all kinds of protective constraints in there. I don't see why that can't be improved upon if people recognize it as the basis of the problem and work at doing it. It requires some effort, yes.

I think the board has to take the leadership in producing that effort. Unless the board does take leadership in producing that effort, the suspicion will continue. But I think the Centennial II process was a step in the right direction in achieving this reduced level of suspicion, and it remains to be seen how far that goes.

We're talking basically about attitudes of members of the public, and you don't revise those just by fiat; it takes a long time of actually working together with a particular process before that develops, to gain that.

Lage: From what you said, there was a good deal of mutual respect at least among board members.

Vaux: Among board members, yes. I'm not sure the extent to which that has yet penetrated into the constituent groups. But if you get mutual respect among board members and mutual respect among District Technical Advisory Committee members, then you have focuses of infection from which those ideas can spread and gradually be built upon.

I think, so far as industry goes, if the process is to get more simple and more flexible the industry has to to accept more fully than it has in the past the validity of certain environmental concerns. I don't think the industry has to accept all environmental concerns, by any means, but I see industry's attitude as, up until now, one of saying, "Until you can prove it's a problem, we won't recognize it."

Now, proof that some of these things are problems is a long ways away because we don't have the research background, and I think the standard of proof has to be much lower. I think the industry has to
Vaux: recognize that if the public perceives something as a problem, then they have to do something other than stonewall. I think there's some movement there that needs to take place and probably will take place as a natural matter of evolution.

Lage: They must come to realize at some point that stonewalling probably put them in a much worse position over the last twenty or thirty years than they would have been in.

Vaux: There are a number of aspects to that. It depends a lot upon the issue. For example, the redwood park thing—one of the things that stood in the way of a better resolution of that sort of thing is simply the way law is structured. I'm sure that companies that owned property in Redwood Creek recognized for a long time that probably a redwood park was going to come. You might say, "Why don't you be gracious about this and work with the process rather than a kind of stonewalling, resisting it every step of the way."

There's at least a legal doctrine, and I'm not enough of a lawyer to know how valid it is, but I think it's probably pretty valid, that if you're looking for compensation from the government in a taking of property, you have to be able to show that you've not colluded in any way with the government in arranging the taking—that it hasn't been a cozy transaction. You see, that can influence a lot the way you think about it. The companies were beholden to their own stockholders to make as good a deal as they could on that, regardless of how they felt about the redwood park.

Lage: They're still trying to make a pretty good deal from redwood park.

Vaux: They still are making a very good deal. I mean, they've made far more out of the redwood park than they would have ever made out of cutting it into lumber. But you can't blame them for that. After all, they didn't ask for the redwood park. It's just sort of one of the ironies which all these situations display.

And I think by the same token, that if we're going to get this more cooperative approach to the regulatory problem, the environmentalists have to move toward more understanding than they yet have—and again, I'm making blanket characterizations here that aren't fair to a lot of individuals in either sector, but this just expresses a personal point of view. I don't think there's as much awareness and understanding among many environmentalists of the economic importance of the forest products industry, particularly in the rural areas.

I alluded to one part of this—I don't think there's very much understanding by most environmentalists of the significance of forest industry in the urban fringe, in light of this open space aspect. I don't think many people perceive that. They think, "Oh, well, let's put it in a park." But when you start to count up how many dollars it costs to put it in the park, it's unbelievable. We haven't yet progressed
Vaux: to the point where most people perceive that timber management, which
implies timber harvesting, is an economic base for open space, the
alternative to which, as you correctly pointed out, is probably sub-
division.

Even less, I think, do they understand the fact that in sixteen
counties the forest products industry is the major economic base for
those sixteen counties. Because it's economic small potatoes in terms
of California industry as a whole, the concern of those sixteen counties
with that economic base tends to get pretty well lost sight of in most
people's minds.

Climate of Uncertainty, Deterrent to Investment

Vaux: There's a further point here: at issue in any kind of forestry manage-
ment is a higher level of investment in the forest lands than is now
going on. Investment in planting trees, investment in better protection
of water resources, whatever you do out there by way of forest management
requires investment of money. For the most part, investments in forest
management are not highly profitable as the market looks at high
profitability. They're reasonable, and they have some advantages to
them in terms of hedge against inflation and various other things of
this kind, but they just aren't highly attractive to most investors.

One of the things that's unattractive is the tremendous uncertainty
that attaches to what that property right in the timberland actually
means. If you plant now, are you going to be able to harvest it in
forty or fifty years and get your money out, or is something going to
happen which precludes you not only from harvesting it but realizing
your investment in any other sense?

So in this sense some environmentalists, I think, are a little bit
contradictory in that they want the forest industry to take better care
of its lands and therefore invest more money in them, but at the same
time, they create uncertainties as to what the future of those lands
may be—whether it's pressure for more wilderness areas, or pressure
for more control over streamside zones, or whatever it is. This creates
more uncertainty, which is a deterrent to the very investment that
environmentalists might like to see in the area. So there's a kind of
inconsistency there that needs to be resolved on the part of the
environmentalists.

Lage: It must be difficult, though, to create a climate of certainty for some-
thing forty or fifty years down the road.

Vaux: It's not a question of creating a climate of certainty; it's more a
matter of the marginal thing of removing certain uncertainties which
because of current history loom large in people's minds. The rise of
Vaux: the environmental movement from the standpoint of a forest landowner has raised all kinds of new uncertainties with which people haven't had experience; therefore, they're difficult to deal with, and so on.

I think there's something that could be done to remove some of those uncertainties. Not that you're ever going to create a climate of certainty, that's impossible, as you say. But you could arrive at some assurances that don't now exist that would remove some of these uncertainties. For example, for tax purposes we have these timber-preserve zones. It seems to me entirely appropriate and proper that once the land is put into timber preserve—they now call it timber production zones, which is a better term because that describes roughly what they are—if it's a timber production zone, why shouldn't the landowner who's in there be assured that when his timber is ripe, he'll be able to harvest it? There is no such assurance.

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Lage: Does having land in the timber production zone imply a tax break?

Vaux: You say a tax break, and that's the way a lot of people would look at it, but again we're in an area where the semantics of terminology is terribly important. All the Forest Tax Reform Act does is provide that the guy can't use the land in a timber production zone for any purpose that's inconsistent with timber growing. In other words, he can't subdivide it. Therefore, the land is valued for tax purposes on the basis of what it's worth for timber growing. So he's not getting a tax break; without the timber production zone, he would be assessed on its speculative value for subdivision purposes, and that's the fastest way to get it subdivided.

Lage: Right, that makes great sense.

Vaux: That's why the law was passed. But the guy still has no assurance that, when the time comes, there won't be a local uproar over his going in there and wanting to cut his timber.

Same thing on public notice. It seems to me if land is zoned "timber production zone," it ought to be a reasonable presumption on everybody's part that someday the land's going to be cut. So why should you have to give public notice, at great expense to the landowner, that you're going to cut the timber, when everybody supposedly has known all along because of the zoning that someday the timber was going to be cut? What's the purpose fulfilled by that public notice? It can be perceived by some people as only alerting a community that might be opposed to it to man the battlements.

Lage: Yet, if that community has grown up with the knowledge that they're growing up next to a timber production zone...
Vaux: Yes. I think those kinds of changes in attitude and changes and modifications of institutions to bring about this better climate are directions in which we ought to go, and that would make quite a lot of difference.

To Advance the Profession of Forestry: Commitment to the Public Interest, Acceptance of the Political Process

Vaux: I think, quite obviously, as long as I'm telling everybody else how to behave, including the environmentalists and the forest landowners and the industry, I ought to direct some comment to my own profession. I think there's a lot of contemporary insecurity on the part of the forestry profession, in the sense that they feel a sense of jeopardy. They lack some sense of professional security and of a clearly established, ongoing role for the profession. I think that's anomalous because, due to the registration law and the provision in the Forest Practice Act that a forester has to sign the timber harvest plan, the forestry profession has a legislatively defined function here. Admittedly, we don't know too much about what it means, but it's a legislatively defined function that doesn't exist anywhere else in the country.

So it's a magnificent opportunity for advancement of the profession. I think I'd criticize my colleagues as a group that up until now more of them have been more sensitive to the threats that situation makes to the profession, rather than to the opportunities that it offers. I'd hope that the profession begins to understand that some kind of widespread acceptance of the profession by society at large requires both a commitment to the public interest and some demonstration of that commitment, as well as technical expertise. But that will take a while to achieve.

I'm not talking about individual foresters. I think many individual foresters have that commitment. But there are others who have a different set of values, and it's going to take a while for the profession itself to clear up what its responsibility to society really is.

Lage: Does this involve the School of Forestry, where we began all this? I would think that would have a role.

Vaux: I think it does involve schools of forestry, but I'm not sure that the schools are the place where the dogma ought to be initiated. It might be that some individual professors would develop it, but I suspect that the dogma has to come out of the profession as a whole before it can be formally recognized as part of the curriculum.
Lage: It seems like it's been a strong component, as I look over the things we've talked about, of the UC School of Forestry. This idea of the public interest aspect of forestry has a long tradition there.

Vaux: I think it does, yes. But the fact remains that you could identify a good many people who went through that school, in the presence of that tradition, and who today, for whatever reason, don't have that perception of the role of the profession.

Lage: Reasons that have to do with their subsequent employment or experience?

Vaux: Well, I can't document what it is. In some ways, it may have been that they came in with different ideas to begin with, or their subsequent professional experience, their economic struggle, whatever it may have been. I think it's a complex question, and I just don't know what the answer to it is. But I feel that, for whatever reason, some element of stronger professional leadership has got to emerge if this nice, tidy vision of a more effective, more simple, more flexible regulatory system is going to emerge. Because I don't see that emerging without a pretty specific personal role for the qualified professional forester.

Lage: He seems sort of the key point in the triangle.

Vaux: Yes. And corollary to this is--I think there's perhaps some lack of understanding and certainly a lack of acceptance both by many members of industry and many members of the profession--some kind of reluctance to accept a legitimate role for the political process as a way of resolving conflict. Either because of training or intuition or values to which they're already committed, people in the industry and in the profession, it seems to me, are reluctant to accept that politics is as legitimate a way of solving conflict problems as the marketplace is. They have no problems in accepting the wisdom of the marketplace in resolving problems, but they have real problems in accepting the political process. I think something has to happen there.

To put that same point another way: I think the political process is regarded by a great many people, maybe on both sides of the fence, as something you capture and use to your own advantage. It's a game where you capture the board and maybe you have it for ten years, then there's a political reversal, and you've got to dig in your heels for the next ten years, and so on, but it's a constant process of capture and recapture.

That's a very different attitude than the one I'm projecting of trying to have a board that's involved in a process of ongoing conflict resolution, where everybody wins a few and loses a few and so on. And the important thing is not what you win and what you lose, but whether the process remains a reasonably stable, ongoing one, which again, says something to people about the uncertainties of the future.
Lage: And allows you to know you're going to always have an input.

Vaux: Yes, yes. And we certainly haven't reached that stage yet, in my judgment.

Steps Toward Achievement of Vaux Objectives

Vaux: Finally, I spoke earlier about some of the objectives I had when I went on the board. One of the things I mentioned there was trying to help make the new laws work. My own personal perception is that those laws are working better now than they were before, and I don't think the board stood in the way of that process.

Another was to encourage more reforestation, and I think the work that the board did on long-term policy in terms of the Forest Improvement Committee's report, in terms of FRAPA, in terms of some of the revisions of the board's own policy statements--like the statement on timber supply--were all encouraging in setting a better climate for stimulating reforestation.

It's anomalous there because the regulatory process on which the board spent so much time is superficially and in many ways essentially adverse to the investment required for more reforestation, because it continually brings to people's attention the obstacles to investment. But I feel that's a necessary evil; it had to be dealt with, but there were some positive things that went along with that.

Among the things that I didn't anticipate as original objectives, but I think were very useful, was that we did, I think, get better relations between the board and the various constituencies. I think the internal organization and staffing had tremendous effects. Those were effects that would have been made necessary by AB 1111 anyway because of the additional work load that put on the board, but we got the jump on that and had the staff in place and operating before that hit us, and that was worthwhile.

Naturally, even though it took six years to revise the silvicultural rules, I took a great deal of satisfaction in that. It will be interesting to see how it turns out. And I guess that's enough said.

Lage: Not a very dramatic ending.

Vaux: I guess everything I've said points to my own sense that the political process is too important to be dramatic about. It's the gut nitty-gritties in how those things are done and how they impact on long-term and broadly-based attitudes of people, that's what's important and not the dramatic incidents.
Lage: The long view is what you bring to this.

Vaux: That implies a long view because it takes so long to see any tangible result. I've observed this in other contexts. When I was teaching forest policy, I used to point out to the class that from the time any idea in forestry policy was introduced to the time when it had some real embodiment like a federal statute, on the average took ten years.

From that standpoint, seven years on the Board of Forestry is really much too soon to see anything happen that's significant. All you can look for is indicators, directions, trends, none of which in and of itself is very dramatic.

Lage: The overall impression is certainly one of tremendous productivity.

Vaux: There were a lot of wheels turning, whether they were spinning or going somewhere is what you historians have to judge twenty years from now.

Transcriber: Michele Anderson
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## TAPE GUIDE -- Henry J. Vaux

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APPENDIX A

Henry J. Vaux


Professional Experience:

Crown Willamett Paper Co., Oregon (1936-37)
Instructor, School of Forestry, Oregon State College (1937-42)
Forest Economist, Louisiana Agricultural Experiment Station (1942-43)
U.S. Forest Service (assignments in Washington, D.C. and in Berkeley) (1946-48)
Lecturer, later Associate Professor and Professor, School of Forestry, University of California (1948 to date)
Dean, School of Forestry and Associate Director of the Agricultural Experiment Station (1955-65)
Director, University of California Wildland Research Center (1958-65)

Active duty in U.S. Naval Reserve, 1943-46.

Principal research and publications deal with timber requirements and markets for forest products; economics of forest insect and disease control; costs and returns of timber growing; economics of timber and natural resource use; and public policies for use of forests and wildlands.

Professional Activities:


Member, Editorial Committee, Society of American Foresters Foresters Field Manual, 1950-52

Advisor, Humboldt County Forestry Committee, 1952-53.

Northern California Section, Society of American Foresters: Vice Chairman, 1951; Chairman, 1952; Policy Committee, 1967-68.


California State Board of Forestry: Honorary Member, 1955-65; Chairman, Joint Committee on Forest Taxation, 1958-62; Member and Chairman of the Board, 1976 to date 1983; Chairman, Calif. Forest Improvement Committee, 1978-1982

Chairman, California Small Woodlands Council, 1960-64.

Consulting Editor, McGraw-Hill American Forestry Series Textbooks, 1953-75.

Numerous activities in forest taxation, including address to Citizen’s Centennial Conference on Pacific Northwest Forest Resources, 1959; Chairman,
Biographical Summary - Henry J. Vaux


Participant in Western Forestry and Conservation Association Annual Meetings including presentation of progress on economics of insect control (1953), public use of forest land (1958), and the role of economics in resource decision-making (1966).

American Forestry Association: Director, 1967-69.


Forest History Society: Director, 1972-74; Member, Editorial Committee.

Various activities in international forestry, including presentation of invited papers at Vth and VIth World Forestry Congresses, participation in work and Congresses of the International Union of Forestry Research Organizations (1961 and 1967) and services as consultant to F.A.O. and the Greek government on organization of forestry research in Greece.

National Academy of Sciences - National Research Council: Member, Study Committee on Environmental Aspects of a National Materials Policy, 1971-73; Member, Panel on Forest Pest Control, 1973-75; Member, Panel on Impacts on the Environment of Resource Management, 1975-77.

Frequent appearances before committees of the California Legislature (including Committees on Natural Resources and Land Use, Revenue and Taxation, and Finance) to testify on forest taxation, forest practice regulation, timber supply and demand, and state interests in forest policy.

Chairman, Organizing Committee, Inter-University Symposium on Renewable Natural Resource Assessment and Programming, 1975-76.

Fellow, Society of American Foresters; Fellow, American Association for Advancement of Science; MacMillan Lecturer, Faculty of Forestry, University of British Columbia, 1954; Corresponding Member, Society of Foresters, Finland; Honorary Life Member, California Alumni Foresters; Honorary Vice-President, American Forestry Association, 1970-71. Recipient Berkeley Citation 1971; Western Forestry and Cons.: Assoc. Lifetime Achievement Award, 1971; Clifford Pinchot Medal, Six Amer. For. 1983.

Resident of Berkeley since 1946; married, two children.

Residence: 622 San Luis Road, Berkeley

Member: American Forestry Association, Sigma Xi, Forest History Society, Xi Sigma Pi, American Association for Advancement of Science, Society of American Foresters.

Church Affiliation: Society of Friends.
PUBLICATIONS OF HENRY J. VAUX


2. 1943 Private forest land ownership, forest land management, and control of timber resources; a progress report. (Typed) 135 pp., March 1, 1943, (no copy).


Publications of Henry J. Vaux


24. 1952 The outlook for economic sugar pine management. (A progress report of the sugar pine study) U.C. School of Forestry, Berkeley, Calif. 25 p. (illus., tables), March 1, 1952.


Publications of Henry J. Vaux


30. 1953 Biography of Joseph Kittredge. U.C. School of Forestry, Berkeley, Calif. 3 p. (no copy)


34. 1954 Economics of the young-growth sugar pine resource - "Why grow sugar pine?" Timberman 56: 37, December 1954 (no copy).

35. 1954 (with Eugene A. Hofsted) An economic appraisal of forest resources and industries in Humboldt County, California. Review prepared for the Humboldt County For. Comm. by School of Forestry, Univ. of Calif. and Humboldt County, Dept. of Forestry in cooperation with Calif. Agric. Ext. Service, 107 pp. illus. (no copy).


42. 1957 To the class of 1957. Timber 1: 10, 1957 (no copy).

Publications of Henry J. Vaux


46. 1957 Taming the watershed: good watershed management based on research makes soil and water serve human needs and prevents them from doing harm. Berkeley, Calif., College of Agriculture, U.C., 12 p., 1957.


49. 1957 Forestry Dean says importance of wood as product on increase despite new competitor materials. S.F. *The Commonwealth* 33. July 1, 1957 (no copy).


Publications of Henry J. Vaux


Publications of Henry J. Vaux


82. 1962 Message from the Dean. Timber, p. 6. 1962, (no copy).


Publications of Henry J. Vaux


Publications of Henry J. Vaux


Supplement to bibliography of Henry J. Vaux
July 1, 1977 to July 1, 1986


APPENDIX B -- Preliminary Outline

Henry J. Vaux Interview--Forest Economics

I. Background and Education

Birthplace, date, family, early interests
Education--high school and Haverford
M.A. and Ph.D. at Berkeley
why you chose forestry and why forest economics
why a Ph.D.
how field was defined at the time--changes 1935-48
educational program at UC
economics department
agricultural economics
influential teachers or fellow students
Relationship to USFS experiment station

II. Early career--influences it might have had on your thinking and the development of your later career

Crown Williamette, 1936-37
Oregon State U., 1937-42
Louisiana Agricultural Experiment Station, 1942-43
World War II service

III. Early Postwar Era, 1948-early '50s

Designing your forest economics courses at Berkeley

What led to publication of Research in the Economics of Forestry?
perceived needs in profession.
concern of Charles Lathrop Pack Foundation
SAF committee on scope and method of Research in Econ of Forestry
experiences compiling the book
working with Duerr
impact of book

Coming of age of forest economics as a discipline
when fully incorporated into forestry schools as research field and Ph.D. curriculum?
when fully respected by foresters in business and industry?
IV. Your views of trends and turning points in forest economics

I list here in a sketchy way some of the major turning points delineated by other forest economists in response to the Forest History Society questionnaire. If your view differs, let's revamp this organization.

1. 1930s--concern with land-use problems and broader social goals
2. Post-war era--concern with production economics, narrowing of focus, improved techniques
3. Environmental decade--a broadening of concerns; national forestry legislation
4. Computer era--integration of operations research, emphasis on econometrics

In each instance, let's discuss:

1. Some of your major research concerns and how they were chosen; what impact they had on forest policy and on the field of forest economics; how you came to your ideas
2. Other major research in the field--genesis, impact
3. Important development, advances, controversies in the field, including influences of major social and political events, as well as of the work of key individuals and changes in the field of economics.

V. Relationships and interactions of forest economics and economists with:

1. Other sub-disciplines of economics
   Input from other economic fields and influence on
   Is it becoming more or less distinct as a field?
2. Forestry profession in general
   Interface with biological and managerial aspects of forestry
   Alston's view of forest economists as creating an intellectual revolt against classical forestry doctrine
   How effectively managers have used economic tools at their disposal
   How effectively did biologists, etc., supply information economists needed about forest behavior under different econ alternatives.
Relationships and interactions with:

3. The Forest Service
   Production goals, 1952
   Timber Resources Review, 1955
   RPA
   NFMA
   others that will illustrate the relationship well?

4. State forestry programs

   Your own role in California testifying on forest practices legislation and serving on the board of forestry.

   Let's discuss here how this role related to your work as a forest economist. Later, in our anticipated full interview, we will go into greater detail.

5. Private forestry
   employment of forest economists by industry and how this affects their work.

VI. Major figures and institutions

   Enumerate and analyze their roles, styles, approaches, contributions

   Point out schools of thought within the field

VII. Specific, important forestry problems that could have been better resolved if economic analysis had been applied, but wasn't. Why wasn't it applied?

   We may have covered everything by the time we get to this one, but it will allow us to pick up anything we may have missed.
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Adams, Frank, "Irrigation, Reclamation, and Water Administration," 1956, 491 p.


Blaisdell, Thomas C. Jr. (in process), Professor Emeritus of Political Science.


Davidson, Mary Blossom, "The Dean of Women and the Importance of Students." 1967, 79 p.


Dornin, May (in process), University Archivist.


Grether, Ewald T. (in process), Dean Emeritus, School of Business Administration.


Jenny, Hans (in process), Professor of Plant and Soil Biology.


Kendrick, James B. Jr. (in process), Vice-President, Agriculture and Natural Resources, retired.


McLaughlin, Donald, "Careers in Mining Geology and Management, University Governance and Teaching," 1975, 318 p.


O’Brien, Morrough P. (in process), Dean Emeritus, College of Engineering.


Stevens, Frank C., "Forty Years in the Office of the President, University of California, 1905-1945," 1959, 175 p.


Stewart, Jessie Harris, "Memories of Girlhood and the University," 1978, 70 p.

Struve, Gleb (in process). Professor of Slavic Language and Literature.

Taylor, Paul Schuster


Woolman, Marjorie J. (in process). Secretary Emeritus of the Regents, University of California.

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9/87
ANN LAGE

B.A., University of California, Berkeley, with major in history, 1963

M.A., University of California, Berkeley, history, 1965

Post-graduate studies, University of California, Berkeley, 1965-66, in American history and education; Junior College teaching credential

Interviewer/member, Sierra Club History Committee, 1970-1974; cochairman, 1978-present

Coordinator/Editor, Sierra Club Oral History Project, 1974-present

Codirector, Sierra Club Documentation Project, Regional Oral History Office, 1980-present

Interviewer/Editor, conservation and natural resources, university history, Regional Oral History Office, 1976-1986