An Interview with

# Frank H. Wadsworth

By

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Frank had recommended the hotel; small and conveniently located in the resort area of San Juan, Puerto Rico. The flight had been delayed a couple of hours, so I was just unpacking when the phone rang. Frank's voice said, "We'll pick you up in fifteen minutes." He also said that I could recognize him as he pulled up because he would be the gringo in a black Jeep.

Dinner that evening with the Wadsworths in their suburban home was an informal delight, mostly in English. We talked of life in Puerto Rico and impressions of visits to the States. Twelve hours of the next three days, Frank and I faced each other with a recorder between us. Two sessions were in an experiment station conference room and one was in a balmy, tropical setting on the patio of their home. We generally followed an outline that we had developed together and his answers to my questions were long and articulate. Frank went over the transcript with care; the pages that follow give detailed insights into a unique career.

Frank H. Wadsworth was born in Chicago on November 26, 1915. During the early years with family and close friends he enjoyed the out-of-doors. Thus, it seems natural to him that he entered the forestry program at the University of Michigan, following two years at junior college. In 1937 he received both a bachelors and masters degree in forestry; his graduate work had focused on Alaskan ecology. Thirteen years later he would earn a Ph.D. at the same university, this time his focus was on tropical forest management in Puerto Rico. Clearly, something had happened during the intervening period.

While a student, Frank had met Gus Pearson, chief silvicultural scientist at the Southwestern Forest and Range Experiment Station at Fort Valley, Arizona, a dozen miles from Flagstaff. He had been favorably impressed and following graduation asked Pearson for a job, this despite his graduate work in Alaska. It took a bit of time, but in 1938 he began at the experiment station, engaged in ponderosa pine growth studies.

Pearson had been named director when the station was founded in 1908--the nation's first. In 1935 he asked to be relieved of his administrative responsibilities, so that he could devote full time to research. In addition to his prominence in the scientific community, Pearson had a daughter named Margaret. Frank wooed and won her hand; the Forest Service anti-nepotism regulation meant he could not work for his father-in-law, and the Wadsworths considered their options.

One of the first announcements described a research job at the Tropical Forest Experiment Station in Puerto Rico. Frank now jokes that they weren't sure just where it was, but after studying the map they decided to go. This decision despite unsettled times following the recent outbreak of World War II. They traveled by train and by ship; in 1942 they arrived in San Juan determined to like it and to stay. They did both.

To help me prepare for this interview, Frank sent me a thirty-seven page curriculum vitae that tabulated his professional life. The numbers are truly impressive: fifty scientific and technical presentations and participation in forty-six technical conferences and workshops. He has been given fifty-six consulting assignments with FAO, USAID, and other institutions, there were also twenty-two "special" assignments to investigate a wide range of tropical forestry problems. He lists fourteen university activities, such as developing a forestry course for the University of the Andes in Venezuela. He notes thirty-seven "scientific accomplishments," many with the government of Puerto Rico through technology transfer. He doesn't always work solo; he documents the ten times that he led a team to solve or resolve a problem. And finally, to 1991, Frank has ninety-five publications to his name. All this in addition to being director of an experiment station, a national forest supervisor, and the American government's most likely forestry representative to any tropical meeting worldwide for fifty remarkable years.

Frank gives many examples from the above lists, usually with wry humor. He has seen it all and by now identifies more with his Third World colleagues than many of his official peers. He gives short shrift to the "propeller tie professors," who announce tropical expertise following a two-week stint looking out of a window. He is also impatient with another category of "expert," the overfed ones with clean shoes who refuse to ride in a jeep, let alone get out of one. Then there are the First World institutions that conduct their Third World assignments in luxury and in English. Frank thinks we can do better.

He also thinks that tropical forest issues are more urgent than temperate ones and that we could justify doing less at home and more abroad for some decades to come with minimal hardship for "us" but significant success for "them." He has given it a lot of thought.

But the pages that follow are not in fact filled with criticisms; instead they tell a first-hand forestry story of Puerto Rico and other tropical regions during the last half-century. The sign over the office that Frank goes to each day says "Special Projects," while signs down the hall are more specific. During taping in December 1992, he talked of retiring "some day" and what he might do then. At this writing a half-year later, he is still going strong.

Harold K. Steen
Durham, NC

Tape 1, Side 1, December 1992

HKS: Let's follow the outline, we don't have to stick to it. Let's start with why forestry, I don't know anything about your background, how you grew up, how you picked forestry.

FLW: I was born and brought up in a part of Chicago called Northwood Park which is in the northwest edge of the city. I had a very close friend throughout my youth, Don Duncan, who became ultimately Dean of Forestry at the University of Missouri. His father was a teacher of science in the Chicago school system and got us interested in bird watching, and we were far enough out of the city so that the forest preserves along the Des Plaines River were within walking distance. That's where O'Hare Airport is right now. Starting in March 1929 we began going out weekends and did it probably for eight or ten years including our period rooming together at Ann Arbor College. Another influence was my own father who was in the paper business in Chicago selling bond papers at the wholesale level, and his position which he worked at 51 years in one company, Gradnor Smith & Co which is now Gradnor Central, led him during our summer vacations which we took in Northern Wisconsin at a resort called Lakewoods, outside of Cable, Wisconsin near Haywood and Mayfield County, to visit paper mills in that area. We went to Cloquet, Minnesota, to International Falls, and we went over into Northern Michigan. I became interested in seeing the forest, we were in the forest when we went to this resort, we hiked through the woods and I got permission to go back one winter and spend a month at this resort. While there timber cruising on the Chequamegan Forest, which was a park, it came to my attention and with snow shoes I went out with them cruising timber for a few days and, thereafter, got a copy of Pinchot's Primer of Forestry and started reading on it. Well by the time Don Duncan and I were ready to go to college, we went together, we both felt that the forestry school was the place to go and Michigan looked like the closest and best. So we went to Ann Arbor, after I had spent about two years in a technical college in Chicago, which was then Lewis Institute and is now Illinois Institute of Technology, we transferred to Ann Arbor in the Forestry School. So, from 1935 to 37 I was a student there as an undergraduate, and because I had advanced credit I was allowed to take a master's degree concurrently with my bachelor's degree is I could write a thesis. In the 1936 summer, the Professor of Forest Pathology, Dowell Baxter who went to Alaska every year studying what he called resupinate polypores which are fungi which attack downed wood, he always took two students with him and I was one who during that year went with him to Alaska. While there along the Yukon River we took a number of measurements which served to give me a thesis on succession along the Yukon where the river had wiped out forest and came back first as willows, then to birch, and poplar, and finally to spruce. So in 1937 I obtained both a B.S.F. degree and a Master of Forestry. At that time there were very few jobs, it was a time after the depression was pretty well advanced. But on the way to Alaska we had gone through Arizona and I had met Gus Pearson at what was then the Southwest Forestry Experiment Station, he was the Director, and at Fort Valley which is 90 miles out of Flagstaff was the center of operations in the Ponderosa pine type. I wrote him inquiring as to whether there might be a field assistant job, and got an affirmative and went out there and worked at Fort Valley with him measuring sample plots. Pearson, who was the first researcher in Forest Service, began the Fort Valley Station after Ian Dana, Henry Clepper and some other people had gone out and decided where the first one should be, and that station is still active. Pearson's first concern was with the growth of trees and he established huge plots, 1/4-section each, all trees, 4 inches diameter or larger were measured. This was in Ponderosa pine type, both cutover and mature . . .

HKS: Do you have any idea why the plots were so large? That's untypical.

FLW: They are not that large today, statistics hadn't appeared, and the big old trees were in groups. I think very likely his concern was with the heterogeneity of the density and so he wanted to capture a variety of conditions. As it turned out, Gus was an observer par excellence, and he got to know trees pretty well individually and he learned that this was growing fast, this one was not, and of course he theorized why and he gradually accumulated enough information so that he had a very good judgment on this matter. He had, I think, six plots--each of them were a 1/4-section, and we had hundreds and hundreds of trees to measure and I was out there with a CC crew from Philadelphia, as it turned out--they were tough guys, and we had Mexicans, too, measuring trees and pruning a young regeneration where Ponderosa pine came up in dense groups. We were to pick out the leaders, prune them up--we used axes--and we thinned out around them to give them a chance. Pearson was afraid of stagnation in these tight coups. They had come up in 1909, of course I didn't get there until 1938. They had been measured in 1909, 1919, 1929, and I was in the '38-39

measurement of these plots. In one or two of them we jumped into eight inches minimum diameter, well the trees had grown up but there were just thousands and thousands of smaller trees that had come up because there were two heavy seed crops in 1914 and 27. That was what I did there.

HKS: What were you trying to determine? The growth rates of the dominant trees?

FLW: Growth rates generally, the regeneration of course, the rate of return. Pearson I think was basically on the defensive because Leo Isaac and Dunk Dunning in the central northwest and California, and Carlos Bates who was in the Black Hills, were all touting the growth of their Ponderosa Pine. Pearson knew that he was dealing with dry climates and of course his pine grew faster than the Black Hills, but it didn't grow as fast as the California one or the central northwest, conditions were more favorable. I think basically he was interested in that. He was ecologically oriented, he studied the parks and wrote an article of why the parks are treeless, it was pretty good stuff, it was on critical soil dryness during a fragment of the year which enough, he thought, to stop the trees. {125} generation was a big feature of his. At the time I was there, there was an internal war on between the timber people, which were Gus Pearson and Herman Crouch, and the cattle people, Cooperrider, Cassidy and two or three others. Where Pearson wanted to keep the cattle off the Ponderosa Pine range until July 15 when the rain started, because then they got enough grass. They were normally put on in May, and they ate the pine tips which came up first before the grass and of course, held back the pine, and at Flagstaff there was an area called the Flag Desert which is now covered with pine. For years it just stood there because cattle and sheep came through and pulled out the roots and everything. There often personal confrontations on this issue. An article prepared by Cooperrider and Cassidy, that the cattle on their way to drink were eating the pines and after they got a good drink they didn't eat the pines anymore, showing actual pictures showing this. Pearson told the then Director, who was Art Upsidy who came in later, that if that article appeared in a journal he would go under his own name and kill him, because he was very well known in journal and he could publish anything and people would accept it, so the article was pressed.

HKS: Did this research lead to one of those publications on normal yield tables of pine?

FLW: Well, he had timber growing {in logging practice in the southwest 150} which was a series they had then, Dana had the northeast. Volume tables were produced, that's right. During that period, in came Bert Lexen. Bert was a mathematician way ahead of his time, and Bert saw research very differently from Pearson. Pearson was an observer and Bert wanted to measure everything and determine the probabilities that what they were seeing was true, as we do now. And they fought. I can remember one Gus saying, "Bert, I don't give a damn whether its significant, I want to know whether its important." And he would go out and he would see things and he'd report them, which were ocular observations. He would spend Sundays, he was an emphatical worker. Lexen, who left after about four years--they had to separate their work. They both got ulcers out of this. They'd go off and just lick their wounds for a whole week and then come back. Lexen told me, he said "I spent all my time here proving what Gus already knew." And it was that kind of a situation. Of course, Gus today would not be accepted because of the way he reaches conclusions. I was a party, I was in that. I did a pruning study out there where we painted the knots on trees--Gus was insisting on our pruning sixteen feet on some trees that had big limbs and we questioned the virtue of that because they were already so big that we thought they'd never heal over. So I took 400 trees and pruned and I'd paint four knots up and down it, measured them, measured the diameter there with the idea of going back and finding out how fast they grew and all. I left before the study was finished. I think the paint is still on the trees the last time I saw it it was still there. Nothing's been done on that. He and I published one journal article on, no I guess it was under my name alone in this case, on the recovery of suppressed trees. When the cutting came through, of course they took the bigger ones, and often there were a lot of blackjacks and yellow pines that were small, they'd been suppressed all their lives and the question was whether they would accelerate. I had scaled a lot of them with the climbers and got the data on how fast they'd been growing with increment borings and published an article in a journal on that. Again, I published another article which I can't remember exactly what it was about, on growth generally, I think the 30 year measurements. Gus was a controversial person, he was a fighter, he was a Norwegian who was removed from the old country by is parents who came to Nebraska, he studied under Bessey at the University of Nebraska. He went first {200} I guess, for about a six month in 1908, then moved to Fort Valley. The man had absolutely pure moral standards as I saw it. He was kind of fatherly in the way he handled his personnel. I think people now would

consider him overbearing. For example, I was living out in Fort Valley about nine miles out of town, I was batching it, and he allowed me to go to town once a week for supplies. He told me if I went not to park the vehicle near a theater and not to stay for dinner, but to come on out and get the car out of their before it was dark.

HKS: That was so people wouldn't see a government car parked in front of a theater or {212}.

FLW: That's right. His philosophy about leave was {215}. If there was a half an hour of any absent at all, any question, he would take the leave and expect us all to do it. I learned that, and I still do it, I mean I just felt it makes you feel better about and besides you get so damn much leave you don't know what to do it with it anyway. Those things have stayed with me because he was at peace with the government. He thought the government was the best employer in the world, and gave it a full measure. It's hard to knock, even though you know there are a lot of imperfections about it. And I still feel this way, when I was director here, I took that attitude and tried to straighten people out.

HKS: This regional competition among research directors, is that because of Pearson's personality or was that typical? Was research competitive in that sense, in those days? Maybe it still is.

FLW: I think so, because Isaac, Dunning, Pearson and Bates were publishing and a lot of it was surmised from their data. They all wanted to show something new and better, and you had a certain amount of that. I remember Gus commenting critically on something that one of the others put out, "well, that's not true at all", you know, that sort of thing. But, if you go back and get those things I don't think you'll see much inventive between the people in print. Pearson, even to Bert Lexen, was an absolute gentlemen. Their families would invite each other to dinner and all this kind of stuff. He kept absolutely different his personal and professional attitudes.

HKS: In the early days of research what sort of peer review, what's possible for peer review when there are so few people working on an individual subject?

FLW: Well, what you call peer review didn't exist. Submitting something to the journal, which was the outlet for most of us because there weren't other journals, ®MDUL¯ Range Management®MDNM¯ and all those other journals all came later. I think was a matter of Henry Clepper and the fellow from Yale, Herman Chapman, who kind of ran the society. Herman and Gus were pretty good friends. Herman came out and Gus went east and saw some of the things they were doing in Urania and Louisiana and elsewhere. Chapman I think was a much harder person to get along with. I think they generally agreed. They didn't impinge on each other at all. I think Gus' copy went through almost untouched. Somebody on the side was commenting on the fact that Pearson's stuff was so well written that nobody goes near it in reviewing it. I don't think the society had a very visible rejection policy, at least I don't know of it, and I think the couple of articles that I know about, it there were any changes they were minor and editorial. But now, I sent a letter into the journal just a few months ago and they cut half of it out and sent it back to me first to see if I would accept it. I wasn't quite happy with it but I assumed they were trying to save space and I didn't disagree. No, in those days science was a few {274} on the fence, kind of. It didn't call for a lot of discipline, it was as people saw it. All this was new and wondrous. The wagon wheel gap study was current at that time, Dana's work on watersheds in the northeast, and Shirley's light and his work on illumination. Those guys were, you might say, out in the blue as spearheaders at that time. All of them, I think, were way ahead of their data and their conclusions, of course some of them didn't wash over time.

HKS: Were you reading European research at the time as some kind of a baseline?

FLW: No, but Pearson knew Schenck. I don't think he went to Europe, but of course, at school our silviculture in Michigan was scotch pine, the Black Forest, and all kinds of stuff they talked to us about, because there was so little to show in this country. No, I don't really think the tie was all that close there. We had all kinds of visitors, Leopold came, we had {298} in now and then, a very famous guy who was on his way to Yale to get his Ph.D.

HKS: What I was thinking about when I asked that question is, did you see the results of German research on growth rates and say, we should try that at Ponderosa Pine to see if it works. I mean, were you influenced by the kinds of studies?

FLW: No. Later when I went for a Ph.D., of course, I had to tussle with German. And my thinking then was that German was the scientific language, you ought to know it, and you ought to read it. But, no I think some people in the east were more influenced. After all, Ponderosa Pine was out in the wild west, I think those people were quite independent of the people east of the plains in much of the work we did. And of course, in the Douglas Fir which we had in Arizona but what we had was a slower growing fir which did not attract attention very much. Well, during this process I became enamored of Gus' daughter, Margaret, and we married. My own family came out two summers to visit briefly and we drove them around Arizona. I traveled all over Arizona during the time I was there, I had a car that I had bought when I went. But before I married her I got a response from the Junior Forester Examination, we had to take that examination, and it was supposed to be for a job for a P1, which $2,000. But there were no P1 jobs and they offered a job called a Shelter Belt Assistant at $1,800, and it was in Ewing, Nebraska. I was in effect told by the letter that if I refused it I would be dropped from the list and I took it. And in February I drove back with a car I had bought, a government car which I drove which finally gave out--an old U.S. Forest Service #128, was sold to a dealer in Flagstaff for $55, and I bought it for $75. And I went back to Nebraska in that through a blizzard and all kinds of things, it was a Model A Ford 1931, and landed happily in the family that ran the creamery, its cattle country. I had a very fine Polish fellow as my technician, knew the trees and knew the people, and I stayed there from February until September planting trees all that spring throughout that part of Nebraska from the sandhills and elsewhere. Then I moved to Lincoln where I worked with another person for two months, all this time begging Pearson to find a chance for me to go back to the Southwest. I didn't want to stay there. I didn't dislike Nebraska, but I liked Arizona. And it came through in November. I got the notice on a Friday, had supper, packed everything in the car, and I took off. I drove all the way to Salt Lake City from there, went off the road once to sleep, got back on. On my way to Tucson I was going through the Wasatch Mountains before dropping down to Salt Lake City, it was pitch black, and there on the road was a barn owl that had hit by a car. It was in good condition. I decided I was going to get that and stuff it. So I stopped the car and went to get the owl and it was alive and it grabbed me, and it sunk its claws in. So I went and got my top coat and wrapped it around and threw it in the back of the car. I got to thinking about rabbit fever because the owl had been feeding on a rabbit. So I got into Salt Lake City at a motel at about 1:00 in the morning and told them I wanted to get an injection for rabbit fever and I wanted to find a Taxidermist. Well, I found both of them. I got a guy out of bed, just gave him the owl and told him that this is where I'm going to be call me when you've got it, send it to me and I'll pay you for it. The next morning, which was a Sunday, I drove all the way to Flagstaff from Salt Lake City, and presented myself Monday morning, which was the date I was supposed to be there. They were astounded, they said they didn't expect me for two weeks. They said didn't you have to clean up things there? And I said, well, I wanted to come. So then I went back with the CC crews doing the same kind of things. It happened that in that period I shared a cabin with Elbert Little, who was an {_____andrologist? 396}, well he was then a range ecologist at that time and working on pinyon pine. He had a theory that since the pine took two years to fruit that he could predict a year ahead where the good crop was going to be for the Indians to go and get it, because they were selling pinyon nuts, in New York the Mediterranean people there liked pinyon nuts--they were accustomed to some other pine over there, and so he was working on that. He was also working on range recovery and he and I batched together for a year or two, and it was that time that I Margaret and I married. They gave us a separate cabin there at Fort Valley and I continued working. Well, in the forest at the end of the day, the CC group would come out in their own truck and I'd stay on mark timber or something, and I'd always pick up pine knots--you know when the old trees fall down and everything rots out except the knots and if you pull the knots out their full of pitch. So, I had in our wood shed a massive pile of pine knots piled up. Well about the third weekend after we married we went for a hike in a woods, it was on a Saturday afternoon. We came back the house had been burned to the ground. The neighbors were there, all they had was a high tank and a rolled water hose and they couldn't put it out. They said it started in the wood shed, or where I had all this stuff, and it was so hot they couldn't put it out and the wind blew it in the house and the house was frame, of course, and they got some of the things out. We hadn't even written all the thank-yous for the wedding presents, but they got our cloths out, and they got some other things. My wife's engagement ring with a diamond in it was in the house on a mirror, and that was in the ashes presumably. Next door was a widow with two sons who I befriended and one of them had accidentally shot the other with a 22, it wasn't a fatal shot but it was off in

the woods. Word got to me and I got him out and to the doctor and he got well. They felt very indebted, and so those two boys got a window screen and started sorting through where they thought the diamond was and they found it. So I got it remounted and she wore it for 20 years or so. Of course, there was an investigation about the fire and all kinds of theories--a squirrel chewing on something, a match, sun on a bottle--but there was no evidence as to how it could have happened and the record was that it was just unexplained and I was never in debt for it, the foundation is still sitting there, they never rebuilt it. When we married Gus said to me, I remember when I said we were planning to get married, he said "well, you know one thing you're going to have to move because under the nepotism rules we can't the two of us work, one subordinate to the other." I said fine, and the first opportunity came when Les Colridge, who was here, went off to Haiti for an assignment for nine months, the tropical station wanted to fill in behind him. So, in January 1942. . .

HKS: The war had just broken out the month before, so it was an extra difficult decision wasn't it?

Tape 1, Side 2

FLW: At that time the war was so new the draft was dealing with single people mostly and it didn't really affect me.

HKS: You weren't concerned with the German U-boats circling?

FLW: That hadn't happened really until we got here. It's true that on the freighter that we came on they posted a guard on the prow every night, but I'm not sure what he could have done.

HKS: Yeah, with a rifle.

FLW: Probably to make us feel better. We came on a ship out of Mobile, which was Waterman, and there were 12 passengers. On those freighters they carried 12 passengers because if you had more you had to have a doctor and other things. Nice cabins. My car came on the thing. I had to pay for my car, I had to pay for my wife. The government considered those both as extras. When we got here the Director of Tropical Forest Experiment Station was Arthur Bevin and Ralph Shull, the Administrative Officer were there at the pier to greet us and took us in, and Ralph Shull put us in up in his home for about two weeks while we searched for house, they helped us find one, an apartment, it was just my wife and myself. That, I think breaks that point 1, and concludes the coming here. I took some Kodachromes on the ship that are still good. They show that harbor coming in, that kind of thing.

HKS: Why don't you go back and pick up--one thread back--when you were a student at Michigan. At what point did you realize you were going to be a research forestry rather than a field forester? Was it because you had extra credits and so you got a master's degree and it just happened or was there some professor that inspired you or what happened?

FLW: The professor that took us to Alaska, I think probably opened my eyes about the fact that why don't I do that successional study. He wanted to follow the succession of the porias and the fungi, and when we published later he's the senior author. The succession was forest and fungi, so he added the fungi, the type, the species. I made a chart showing from the river back how the things progressed and how many years, and all that. He was the one who I think inspired that study and so the degree was taken under him, Baxter. So, the fact that I could do it without an additional time had nothing I think directly to do with research, because I didn't take a single course in research at school, there wasn't such a thing. When we filled out the JF examination I think we showed a preference for research or administration, I can't even remember what I put down. I know there were very few research jobs, so it might well have been that I put down just management, you know. The chance to work with Gus Pearson attracted me and I got to pouring over the data, we use the darn Monroe's, you know all that kind of stuff in the old days. Tampering with the mathematics attracted me and I did a lot of side analyses that were not what Gus necessarily wanted. I think the research just kind of fell into place. The opportunities, I found out in research, for advancement were better than they were in the national forest because of a much larger number of people in the national forest that were waiting for jobs, and it seemed like the research people had jumped forward. When I left there I

was a P-1, which is a GS-5 now. In Puerto Rico they jumped me two grades. One grade was a promotion, the other grade was cost of living and the only way they could cover it was to give me an added grade and all the rest of the people had an added grade for that reason. It was an unspoken difference, so I went to a GS-9, from GS-5, instead of stopping at a GS-7. And stayed a GS-9, and the promotions and all that happened in a later chapter of this. That was not a factor in my decision, I had already decided before I knew that. We had to go somewhere. We had the impression that if we didn't accept the Puerto Rican assignment we would still be considered for something somewhere else. We ran to look at the map and didn't see any reason why not. We were young and didn't have children. I think the fact that we made the choice, and I think we did have some choices, had a lot to do with a rather defensive attitude we took after we got here. Defensive against, many people here were very unhappy, we ran into an awful lot of that, which is a second point that we make here.

HKS: Okay, so now you're in San Juan with Margaret, you've found an apartment, you've got a job. What happens the first month?

FLW: Well, the striking thing the very first month was the Director, Arthur Bevin, who came from the pacific northwest and had been here about a year and a half before I got here, the station was new, came down to my office and said well, what are you going to do. I had this beautiful assistant, Jose Meraro, who I got to know to know right away. He was an agronomist that the long experience in the nurseries here and was interested in planting, and the CCC had put in something like 10,000 acres of plantations all over the island. The state forest system is 14 units, and the federal system, some of private lands through the extension service, there was an extension forester. Many of the plantations had failed, in fact, the station was set up because of the failure of CCC regeneration. McSweeny-McNary, which is a 1928 Act that set up all those stations said, "and one in the possessions of the United States in the West Indies", which were then Puerto Rico and the Virgin Islands. This was activated in 1939. All the rest of them had been set up, and this one hadn't been, and then in 1939 it was set up and Arthur Bevin came down. But he had no tropical background. So we immediately decided to make a thorough analysis of adaptability of these species, try to look at management of them, those that are going along well. They had brought in at least two hundred species, different kinds, some of them native, some exotic and tried them all over the nurseries. Almost all the natives had failed, and some the exotics were {102}, like mahogany and teak. Jose knew where the plantations were and we set up procedures to go out and measure them and establish plots for the ones that are promising and began repeat measurements. I was worried about how the ones would need penning that were getting bigger, you know and no one else knew anything about penning them. This consumed us for 10 years. Just shear trying to get a hold of what was happening in all these plantations all over the island, from desert conditions in the southwest to pure water practically in the west forest.

HKS: It was the same planting stock, no matter ecosystem?

FLW: Yes, except that we had some judgment as to which trees were adapted to dry country and wet.

HKS: The original planting, though?

FLW: That's right. The planting was done in 1936 throughout 1941, and then CCC was practically wiped out with the water. So, we were coasting and we were quite. The nurseries had subsided and we didn't have much labor. There were just two researchers, and I had a secretary, who also was a very fine woman, who had a lot to do with my concepts of Puerto Ricans. Well, maybe before dipping entirely into the work, let me talk a little about our personal response to Puerto Rico as a community. We didn't know the language and the apartment we rented was surround by middle class Puerto Ricans, who in those days had no emotional antagonism to using English--there's some of that today, people who feel its a weakening of the culture--and they welcomed us. When our children appeared there children were about the same age and we had birthday parties together. I remember the first Thanksgiving, we were on the second floor, and the people down below that owned the building invited us to Thanksgiving dinner and they had turkey, they had cranberry sauce, they brought out the rice and peas. It was a genuine warmth in those people. My wife, who was a soprano when I met her--she was giving concerts--had sort of a delicate personality. We learned Spanish by going to the University, we took a couple courses there and it got us to where we understood pretty well and we were haltingly using it some. We were encouraged by all these people, they felt it was a

measure of equality of something, which I think it is. We felt that these were nice people. Many of them lacked some privileges, but they were making do, and they were happy, and it just seemed like they were good citizens. Well, officially we were thrown in, not in the experiment station so much, but in the national forest which was distinct at that time, a different place. But we had parties together because we were all Forest Service. A lot of people from the states who were very, very unhappy with being here, they disliked the Puerto Ricans, they were derogatory in their talk, they made it sound as though they were being martyrs, some of them were here on censoring mail because of the wartime, and a number of other federal jobs that were related to military. They complained about the schools, they complained about the prices, and Bevin himself got on the USDA war board which controlled food inputs to Puerto Rico from the states, and got himself thrown out of Puerto Rico because he criticized the governor's wife for insisting on them bringing in corn flakes, instead of some staple. He did it in the newspapers and he was kicked out. He and the supervisor fought almost physically from the word go. The supervisor thought he was going to get the experiment station, he built this building where we started it, and when it was finished a new man came in. Well, that was immediately a problem. We had to get permits to walk on the national forest, to put plots in. The rangers spotted me and Meraro walking through a place and they wanted to know what we were doing there and whether we had a permit, and one of our plots--a fly camp was set up near and they put a privy up right in the middle of one of our plots--they knew it was a plot. We had a situation, it was horrible. The supervisor himself was on his second wife, which was his secretary, who anyway was a very fine woman--I think she still is, he's gone. He was an alcoholic. His assistant supervisor and his wife were both very serious alcoholics. When we'd have parties, the Forest Service had a policy at the National Forest that every Friday afternoon nobody would go home. They had a terrace on the second floor of a building and they'd dance until about 5:00 in the morning then they'd go home. Well, Ralph Shull told me that when he first got here, he was an administrative assistant {183}, they told him, "well, you're going to come to the party aren't you", and so he ran home got his wife and brought her. And that didn't work well because not only did she not want to go back but she said he couldn't anymore. There was wife trading and everything else. Well, finally the two were combined in 1943 all put together under what was then called the Tropical Forestry Unit. I inherited the secretary of the supervisor who was one that had been one of the most wild of the whole group. She let it be known that she was going to break my family up in six months, she was a very interesting person, she was brilliant.

HKS: American?

FLW: No, no, she was Puerto Rican. She was a very attractive person and worked well. I lead all this into the fact that we found ourselves questioning why these people disliked Puerto Ricans so much. There reasons were ones we didn't see the basis for. I kept thinking, well Puerto Ricans are different from us and I finally came up, at that time, that the only difference was 3" in height, and all the rest of it looked liked the same. There are some social things that are different, but Puerto Ricans can beat us in basketball, or in baseball, or in anything else. There smart in all kinds of things.

HKS: Was it Protestant vs. Catholic. Was that an issue for the ones that were unhappy?

FLW: We were Protestants. I don't think so. We had a problem with my son in school. He went to a Catholic school and when cataclysm came up in the third grade his mother explained to him that he was in the Protestant church and that he wouldn't be taking cataclysm. Well, they put him another room by himself during this cataclysm instruction. He did his homework and laughed at the students. Said that they didn't get their homework done. So they took his work away from him and left in that room. He came out of that school, he went all the way through the sixth grade, viciously opposed to Catholicism because they were hypocrites. He said that these kids don't go to church, they kneel and do all these things, but they don't mean it--they don't understand it. He then went to the Protestant high school, and the second year in high school a doctrine teacher reached. And he said, "mother, I want to go to church." So, he then joined the church, he's Protestant. He's {226}, so he bounced and came the other way. But, Peggy and I liked so many Puerto Ricans. The things that we didn't like about it here, we never considered that we made a mistake in coming here. We had a bias, because we made that judgment. We didn't want it to be a mistake.

HKS: Did you feel like an expatriate?

FLW: I feel more that way today than I did then. I can remember when cars would get out of the way when I was driving a green car down the car, and when children in the far back interior would stare at me. I was the first Americano they had seen. The country people we dealt with a lot were awed in my presence to some degree. They were very courteous and all this.

HKS: You're quite a bit taller than, not only fair complexion.

FLW: That's right, and I certainly don't look like a Puerto Rican, and of course I didn't talk like one. And as I told you last night, we had a show up in one of the forest where we were introducing a movie, they had never seen a movie before. We had a truck with a battery powered projector and stuff. I tried to stumble along in describing what forestry was about, and why they were important and all. I made a mistake in mispronouncing a word that in your and my country would be laughable, openly in front of the speaker. Nothing happened. It was only two weeks later that Beraro and the pickup heard me do that again. They said "Frank, that word is pronounced like this." That made me immediately suspicious that I'd done something wrong, and I found out that instead of using the term for blue jeans, I'd used testicles. You can see we're in a mixed group. This would bring hilarity in our community, but it didn't. Those are things that impressed me, because these people were so generous or hospitable. You could stop at the home of a farmer out there that had no furniture except for boxes and he made you wait for coffee before you keep on going. My rule is that Gus Pearson wouldn't have taken the coffee, that's what the rules said you must not accept any favors. I had trouble with this at the outset, but I knew that the trouble would be greater finally, and I capitulated, except for bananas and things like this when they come, but you certainly don't ask for it. Anyway, we got to liking the people. When I came back from Alaska I wanted to work in the far north. I wrote to Canada, looking for a job on the Chippewa National Forest or the Superior and there were no jobs. And when we landed here and we decided we liked the people. I liked it better than my wife. She had a harder row to hoe than I did because she had to deal with the stores, merchants, the people who are actually doctors, and people who are sometime troublesome and you have to good vocabulary to be able to talk to them. Well, I was surrounded by people in the office who were bilingual, and well educated. My contacts were pretty smooth, in fact, for two years I was using English most of the time. My wife, who had a fever in Arizona, picked ups asthma here and she never lost it. It was, I think, the cause of her death. All the time we were here she was under a number of drugs, {293}, cigarettes, and all kinds of things, many of them not good for her, because we didn't have anything better. Of course, they have gotten better now. We debated when it looked like I was near retirement where to go live that she wouldn't have that. We thought of going back to Tucson where she was born and brought up. We stayed with a friend of hers, visiting there, and that night in the room she had the worst case of asthma she'd ever had in her life. It was apparently due to an air conditioner that was full of mold. She suffered both from mold and dust, so both dryness and wetness. The only time she was completely free of it was when we went to a snow covered area, and then she didn't have it. The doctors told us that trying to flee it wasn't going to help, because it had gone so long it was approaching emphysema, and we had gone so long it was emotionally motivated to some extent. She had a bad day and she'd have an asthma, as though it changed her susceptibility. My boys, I think the one that's still alive, feels like it would have been wiser to move out before she died. But the doctors didn't support that.

HKS: Well, wartime shortages and rationing that was experienced in the States must have been more extreme here, or at least, you assume that they were worse here.

FLW: Yes, there was a degree of that. There was a compensation in that the island was still largely a farming community. People ran the land, and so staple foods, not rice or beans, but the root vegetables were here. Bananas, plantains, in quantity, and pigs were here as a staple food. Lard was short. I can remember contest in which the winner would get a 37 lb. can of lard. It was rationed. And we had rationing in gasoline. We sold our car after a one year, because we'd only get "A" ticket and it didn't give us enough gas to keep the battery up in the car, let alone move around the island. Fortunately, before rationing became serious we traveled the whole island, we got to like it, knew a lot of different places. Then we were seven years without a car. I was within walking distance from this building, it was not very far inland, there were buses and we traveled that way. Of course, there wasn't much traffic. Well, maybe that's enough on the personal side.

Officially, we worked on planting. And it developed that there were a number of neighboring islands that were practicing forestry. Arthur Bevin made a contact in Trinidad with the British and they actually supported a journal that Holdridge had started the year before I came, the Caribbean Forester, which I edited for 24 years until President Johnson killed it because we had one issue without any of our work in that was all contributed from other people and he said "you work for the government and you publish the work of private citizens," and so forth, so the Caribbean Forester died in 1964. But it carried articles from all over the Caribbean and elsewhere. It's still being cited to some extent. The British paid part of the cost, but that didn't launder it, it didn't survive. Harper tried to keep it alive in Washington, and I think for six or seven years he was effective in bluffing out the forces that wanted to stop it. We took pride in the fact that they weren't our articles, we were able to get a good mix of things.

HKS: Is that a rare document now, or are there sets available? I've never seen a set of Caribbean Forester.

FLW: Of course we have them in the library here. There are sets around, but not very many places. Many of the places we sent it no longer are as they were, and so it disappeared. There are places that we sent it that no one would have thought of it as a permanent manual, and so they chucked it out. But the Caribbean Forester still has the {378} of the French West Indies in it, which is a very long document, a supplement, and it has a lot of early reports which people will now will cite as prior work that has been done in the field. I've had people like Poots in Florida, must be a well known scientist from the tropics, refer to it as though it were still in print. He's probably never seen it, you know. Our own work now is toward adding another, but we're toying with what it means, its a lot of work. The director wants it to be a scientific thing, like Forest Science, and I don't. I want it to be something where even the dirty shoes can get an article or read something they want, a more applicable thing.

HKS: Are there other English language forestry journals, or are there quality Spanish language forestry literature for people working in the field?

FLW: No, there's a journal in Costa Rica called the Turialba which is mostly agriculture, but it has forestry articles in it. That agreed to take over when we lost the Caribbean Forester, and Turialba extracted the final pages on forestry and came out with a separate publication but it didn't survive. It was under Budowski and he left and it didn't continue. There are forestry journals all through Latin America that start and stop and are infrequent. None of them are purely forestry much, they tend to be a lot of other things. Of course, environment has snuck in now and so you've got all kinds of ecological articles that are peripheral from the original. I think the ground is still clean waiting for somebody to come in with a good one, and we'll get articles from all over if we do so, many of which I wouldn't accept but still, I think the people who write. . . During the 24 years that I edited this I emasculated articles, typically, but knew that the authors wanted to see themselves in print enough so they weren't going to complain. And when they criticized their government or they use all kinds of tricks, you know, to get it in print I would just strike it completely. I never got any complaints from anybody for what I did to those.

HKS: So most of the scientific literature that deals with tropical ecosystems results from first world people studying it and publishing it in first world journals. There's no third world literature, as such?

FLW: Well, there's the Malayan Forester, which is a good one. The Indian Forestry is a pretty good one, it's in the 125th {437}. They were British for many years. The Australian Journal covers northern Australia which has some tropical stuff. In Africa there's not much, two or three left--the British left, the French left. There's a journal in France {443 Tropics} published by {445} which the French forestry school that deals with the tropics--it's good. It deals mostly with West Africa. And the {448} Forestry Review is widely tropical, not entirely, it's very high quality, and you can get articles in those. I think if that one of the things of the new institute is to have an organ of some kind . . .

HKS: I'm surprised that there isn't something.

FLW: Well there's been pressure, but it cost money and it takes people. I know very well that the director himself isn't going to spend time with it, on screening or editing. He has a journal here locally that works out of the teacher association, but it's very hard work. I did it almost always before 6:00 a.m. That was the only

way you could get free time to analyze the things, decide what paragraphs to do this with, and all that kind of stuff. I'm sure you can get away with that anymore. The alternative is to send it back and the poor guy in Bolivia doesn't get his article published and feels miffed. There's a tradeoff that you have to think about. The two of us continued in this kind of research on regeneration for, certainly, Beraro left in 1965, so it was quite a long time that we did that. But by 1945, which was still early--or before that in 1943, I got to wondering about how much the natural forest grew. We had all heard about the marvels of tropical climate. So in 1943 I began a series of permanent plots in the Caribbean National Forest to examine them, and designated them as experimental forest.

Wadsworth, Tape 2, Side 1, December 1992

Wadsworth: Ed Munns was in Forest Influences Research in Washington at the time. I don't remember if he was forest management or research, but at the end of these plots, they were 1/4 plots--three of them, but at the end of one year I ran back there practically to fit the tape around them report to the world for the first time, you know, what is going on in these forests. I came up with an average growth rate, which was just the same as I found in the Yukon. I sent the data up north, and Munns replied. He said, well, either go to a different place or check your measurements. It was good letter, I wish I'd kept it. What came out was the first year you make mistakes. If anything falls on the line you throw it forward, and that cumulatively leaves a big error. The second year, its minimized or reduced because the growth if greater, its a smaller percentage of the error. By the third year we found out by experience in washes out, and the third year growth records are much like a ten year growth record, because you don't have that false error there, but the growth stayed that much. But the reasons were, they seem quite evident now, is that the forest densifies until it maximizes the biomass that the acre can carry, and so growth going forward can only replace mortality and there's no hurry about either of them. The trees living for a long time. So I was looking at a natural situation, which has led foresters everywhere to assume that the natural forest grows so slow that we have to have plantations, we can't work with them. But nobody really tries seriously opening it up and giving the right trees the room to grow. These are things we did much later. Actually the natural forests were progressed in 1946 and 1947, and I put in 11 more plots, each one an acre--2 x 5 chains in old growth forest, a modified forest, in two different forest types. In fact, there were two more forest in the pound type as well, so there's 13 altogether. These were on five year measurement basis figuring that we ought to be prepared for hurricanes, we ought to know about whether climate was constant. The reason for the larger size was that I found in the smaller plots that I left too few trees of any species to give me any average by species. You have to have species and crown class--dominant, predominant, medium, suppressed--and you ought to have some of each for each species in order to be able to determine the averages and differences. And it takes acres in order to pile up that many. Well in a big plot like an acre you get to many little trees and not enough big trees, but we had no solution to that, so that's what we did. Those plots were established in 1946 and 1947 are today the backbone of what we call our long term growth studies. They've been carried now for almost 50 years, and we have repeated measurements in them so you can document behavior of any tree over a long time. The original purpose was just to corral enough trees so we could relocate them, put numbers so we would get idea of how well they were doing. Well, in 20 years we had all that, but researchers are loath to let go of what they start and we never dropped them. In fact we spent money to keep them going. Today we are still measuring them and ecologist have snuck in and asked questions we never did, and gone back. It's an encyclopedia for them. They look at all kinds of things, they study soil in more detail, and animal life and everything else and try to relate it to this. We now can plot when the hurricane was by what happened to the stands in the past, now knowing what the hurricane did to this one.

We'll go back to how this organization kind of developed. In 1942 when arrived we had a director here, an administrative assistant, and we had my research position and an assistant with a secretary. I mentioned that there was trouble between the national forest and research, which reached a point in 1943 in which both people were removed. One, as I said because of his argument with the governor's wife, and the supervisor, Eworth Hadley at that time. It had gotten to a point where we couldn't work together at all. One story was that Beven had gone to Trinidad on business and Beven's wife made a pass at Hadley and he refused her and that produced bitterness that went over forever, and they couldn't even communicate.

Pete: It was really a personal relationship, it wasn't a nationwide policy in research and administration?

Wadsworth: So Charlie Evans from the regional office, who was Hadley's boss, came down with the idea that he could knock the two heads together. And of course, research was out of Washington directly then, it was under any other station. Evan didn't have to pay any attention to what the regional forester said. Of course the visit was a failure and they decided for the benefit for the Forest Service as a whole that they would get rid of both people. So Beven was sent to Costa Rica to work with oaks or wartime whiskey barrels, or something, and Hadley went to the Amazon to get rubber. When they both went out, my former director from Arizona Arthur Hudson, was transferred in as Director of the Tropical Forest Unit, the two were put together at that time. They moved over, both of them, into this building. The first time this building was used by the national forest. That was in 1943. Hudson stayed until 1951, he was followed by Henry Bosworth, who stayed until 1953, and then Bosworth was eased out by rumors that he was a homosexual which were never proven and I think they were wrong but in those days that was not the way to be, and he graciously said he was 10 months away from retirement and he would go if I'm an embarrassment to you. That pulled the rug out from under the inspector of the department that came down here and spent weeks trying to get evidence--he had a mystery phone call with me and I was very embarrassed because I was the {111}, and there was no proof as far as we knew. When Bosworth's days were up, and as the inspector called down from the hotel and said that we think your services are no longer needed here, he'd already destroyed him because he'd gone to the janitors and asked all kinds of questions, and you know the poor man, whether guilty or innocent, didn't have any prospect of directing anymore. So Bosworth said he'd leave. Well, he was replaced by a person by the name of I. Pat Murray. The chief, who was then McArdle, came down with Murray in 1953 to take over. At that time we separated the state forest service which had been together with us since 1917, into the a separate unit in the state government under the Department of Agriculture. That was done in wartime, or in post wartime, in which we had a unit in the middle of the island, the Tora Negro, which was by the efficiency experts to small to administer well, so it was right for the state forest so we turned that over to them. We turned over the roads to the commonwealth, we turned over the recreation area to the commonwealth tourism group, we did what the chief would call "going out the national forest business." The Caribbean National Forest was named officially the Luquillo Experimental Forest, we changed all the signs on it. The chief came down, I took him to the airport and we had a rather historic time then. McArdle said why didn't you tell us about this problem, because what we normally do is we transfer a person if there's even a cloud of a doubt of this kind and we avoid embarrassment. And the first thing he said was don't you dare false witness because there's no evidence, we've seen no evidence of any guilt against this man, and we're not going to act that way. They gave him 10 months {147}, I think he went to Texas. Anyway, he said why didn't you tell us. And I'd been expecting that question, and I told him that I believe my first reverence is to God, my second is to the president, my third is to the department, fourth is the Forest Service and I was confronted with an inspector from the department who bore identification, said he'd have my job in two weeks if I told anybody and I felt that I was responsible to him. And until he made his inspection, his search for evidence--I saw no evidence, this man was no problem to us as far as I knew. What happened was that he lived in an apartment, he had a boy come in on the weekends to clean up the place and the neighboring people saw this and thought he was suspect of homosexuality. That was the only complaint that got all the way to Washington. I didn't know it. McArdle said, well, that's a good answer. Then I added, but I think you already knew it. And he said, what makes you say that? And I said well, because when Earl Loveridge came down some months ago without his wife we had a dinner, and after dinner the ladies and men separated off in two rooms and were talking and on my way home that night with my wife she said Mrs. Loveridge said how is Henry behaving? And the women, of course, gave no answer at all and didn't know what to say. And she said that where he came from he a reputation for liking little boys, and nothing more was said. And I was furious. I had an offer from the University of Michigan to take Rick Young's job in silviculture and I was about to write them and say if it was still open I'll take it, because I felt they were sending a second team down here. The chief staff knew this and here they sent this guy down. And McArdle said either you take that back or prove it. Well, my wife doesn't lie and she's no gossip, she was just astounded at this, that's all and I believe it. And he said, well, I give you one option here--you come up to Washington and I want you to confront Loveridge with this.

Pete: The seriousness was what, the harassment of an innocent employee. In McArdle's mind what was the problem?

Wadsworth: That was it. But he immediately had another thing in mind that I heard later. I didn't realize it but he was trying to get Loveridge, because Loveridge was the leak in his staff and he couldn't prove it. He

called me up there to Washington. As far as timber management, Windy Ayre was there and I went in his office and sat around and did some things. And Windy said what are you up here for and that sort of thing. And I said I don't know the chief called me in. The chief came down to the office and Windy was astounded, he said that's the first time he's ever been in this office. And he told me I want you to find Earl Loveridge and I want you to tell him what you told me and I want you to tell me his reaction. It was hard to get Loveridge, but finally both us lined up in the same urinal and I said, well, Earl you got a minute? He said sure come on in. I explained what had happened. He said that well, Frank, you and your wife are such lovely people when we went there, we liked you so much its just incredible that you're this way. And I walked out.

Pete: This way?

Wadsworth: Well, by telling on him or whatever. He said the whole story was false, that was the idea he took. I don't know what happened between him and his wife after that, that isn't my business. The chief asked me to come in and I came in, told him just exactly what happened. He said fine, thank you very much. Well after the chief retired we met in a meeting and he pulled me over to a corner and said I've got to tell you the rest of the story now. He said that we, for a long time, knew that our secrets were getting out of this staff. I suspected Loveridge but I had no evidence, and when this happened I brought him in and I ripped the hell out of him and he had to leave. He left the Forest Service.

Pete: The secrets would be the discussions of personnel, what kinds of secrets were they?

Wadsworth: Anything the chief of staff would want to be confidential at their level, I assume. I never knew what they were, it wasn't my business either. McArdle, I think, was a very particular person in this kind of thing. I think it must have irked him a great deal. Loveridge wanted his job, and wanted it when he got it, and I think Loveridge felt that putting a researcher as chief was a big mistake. When Loveridge came down here on that trip we had a fellow from the Northern Rocky Mountain Station came with him. The war was over and Puerto Rico had imported a hundred and forty-three thousand kerosene stoves, and the women had stopped using charcoal, and we couldn't sell charcoal which we were doing for silviculture. It was a very good business in the forest, we were able to get rid of all kinds crooked and inferior trees, we'd done it for years, we had 5,000 acres of it. We went around the island, Bosworth, Loveridge and this other fellow from the Northern Rocky Mountain Station, and on the way back Loveridge said, Henry, you think it's time to bring this up with Wadsworth. And he said sure, go ahead. Loveridge said, Frank, you told us when you first got here that you had a very nice silvicultural operation going in the forest with charcoal, and that the charcoal market had gone down and you haven't in months made many timber sales, and we sort of think that an aggressive forester would search out another outlet and keep this thing going. I said, well, for a long time I wasn't sure that the market was dead and I just don't know any other market, there's not any use for those trees other than for fuel. The country people have plenty of fuel from trees around their homes. And he said, how do you expect to get ahead unless you push along with these things, I need action here. And I was mad. I said I don't want Bosworth's job, nor three times what he's paid, nor yours for five times what you're paid. Nothing more was said until we stopped for gasoline. We stopped at a gas pump. And the other guy got out, the one from Rocky Mountain Station. He said {253}, and I said I don't I care, and he said well Loveridge thinks everybody ought to want to be chief. That's their career plan for people, to go through the career ladder and get to the top, you know, that's what foresters are good for. And I said well, if I'm through I'm through, but frankly I think some of our best people are supervisors and rangers that are happily going on their whole lives in a community where they're doing well and I don't take any blame for this loss of charcoal market. You know, we talked a lot. And so, there was some past to this, it sort of bore on Loveridge's being a kind of a renegade in this chief's staff that suggested that he wanted to be chief. Well, he became assistant ambassador to Venezuela, or something after that. And years later wrote me a rather nice letter, it was a remarkable thing because of the past.

Anyway, in 1953 Murray came in, and Pat Murray had just come back from working with Patten in Europe. He'd been on the big binge of those people. And he was an engineered mind that could do anything. He was impetuous and Loveridge was the one who picked and I'm sure that Loveridge picked him to get rid of me. He was administrator in charge, I was the research person. I outgraded him one grade but he ran the shop, you know. He changed everything he could, apparently to raise my hackles, this is what I thought. He changed the hours of work, he did a lot of things which to me were GS-2 decisions. Presumably I had done

something wrong in set up because I'd been sort of running things before that. Pat stayed until 1956, and he left a real mess with some of our radio permits. Two things that we did, one, ER Squibb was looking for a local source of a tree that lowers blood pressure, Rauwolfia, and there's a Rauwolfia that is native here. Its a tree, its in India, the one's that commercially used--the bark is used to produce Rauwolfin, which is a component of a medicine to drop blood pressure. They felt that, well, its tropical and Puerto Rico belongs to the U.S. so let's produce here, and we have a Rauwolfia native here that's less potent. They came to Pat Murray and said where in the forest can we plant this Rauwolfia? and he got one of the rangers in the field to pick out a big patch of land and they cleared it and planted it, they knocked down the trees and planted this Rauwolfia in there for ER Squibb. We had an inspector come in and said, well, is there a permit for this, a contract for this, whey is it we're doing this for Squibb? It turned out the ranger had used a lot of his personal time to weed and help the trees along. And the inspector, from Atlanta, came in and said why are you doing all these favors for Squibb, he was suspicious there was some hanky-panky there. And the ranger apparently talked himself out of any trouble, I don't think there was any hanky-panky with him I think that he just had a friend that he'd like to help, you know. But the ranger, it looked like the ranger was doing a lot of favors for this permittee--I think he was doing it to get brownie points from the supervisor it wasn't evident to the inspector and he bored in on this ranger who was a person who had been a very wild individual as a young man and he got religion and became a purist and was actually a preacher on Sundays. And he went in a coma, practically, and he was in real trauma for a whole year after that because he couldn't take kind of pressure. I don't think it was any guilt at all, I knew the man very well. And Murray's other problem was with a radio permittee, who had a shack up on the hill with an antenna and Murray insisted that he build a better building and the guy was the biggest television station on the island, and they slowed up and didn't do it. And he said, well, I'm going to push that building to another place, its too close to the road, we used to do this in Europe with tanks, and he got a bulldozer. This building was blocks, he right through and came out the other side. Completely wrecked the building and they sued us for a couple thousand dollars, and Pat left that one. Plus the timber went right across a watershed 100 feet above an intake for the community and all the logs had to be dragged. All those things fell on my abacus, in 1956 I became the director. When Pat finally left was an interesting thing. Pat Murray and his family went to Ponce on the south side of the island to catch a boat, they decided to go on a boat to the states. The man who took them in an official car to Ponce, an official trip, came to my home that night and said Frank, get a ticket to Washington and get there as quick as you can. And I said why. And he said, don' you know why? And I said no. And he said, well, Pat is going to declare you a communist in front of the chief up there. He told me that on my way to Ponce. And I said well, okay, what's it all about. And he said, you remember when you had those 29 students from the other countries and we had that final fiesta and we toasted every country and you refused to toast the United States and Pat got up on the table drunk and made the toast to the U.S. And I said yes, I remember that. He said he's going to use that against you. And I didn't toast it because I thought it was inappropriate, the U.S. financed the whole thing and I just felt we don't want to blow our own horn in front of all these people, and I paid no attention to it. Three months later in Copocalina Beach in Brazil I was with Harper, who was the research person on the chief's staff, and we're sitting there on the bench watching the girls go by or something, it was a Sunday before a meeting was going to start on Monday. And Harper said to me, do you ever wonder whether Pat Murray liked you or not? I said no, I didn't wonder I knew he didn't. He said, well, he did something up in Washington that was ridiculous. He said he came in with the chief of the staff and he declared that you ought to be let go because you're a communist. And Cliff was chief at the time and he listened to him for awhile and he explained that I was not waving the American flag properly in front of other countries and stuff. The chief said I guess that's enough and so he walked out and the chief said to the staff, well, what the heck to do you with a guy like this? Well, the sad thing is that he had been promoted to a job in Wyoming or somewhere and word got back to Puerto Rico that guy had been promoted when he left and all the mess he left us. Harper said nothing ever came of it and I knew that Harper would defend me so I'd be alright.

I took over in 1956, and at that time the state government had the road system, the recreational area, and the National Forest was called the Luquillo Experimental Forest. I was getting $65,000 of so called protection and management money which is a national forest line item.

Pete: I'm not sure I understand. You're essentially a forest supervisor and director of the experiment station, in terms of the way you function?

Wadsworth: That's right, that's the way it worked. We were together. It was called an experimental forest, but it was looked upon as a research facility. We'd gone to the tropical forest unit, I think we went from tropical forest experiment station first to tropical regional, then we became the tropical forest unit because people said that's not a region, and the name again as shifted in 1956.

Pete: But you answered to Les Harper in Washington, D.C. Who did you answer to for this management money? {435}

Wadsworth: No, Les Harper. They transferred the money to research so we wouldn't have any accounting problems, and Les' orders were sweep in under the rug. Don't let all that administrative detail hurt your research program. Well, it was poor decision, because the $65,000 was all we had until 1974, with all that postwar inflation and everything else. The trails ran down, we couldn't do it. Well we had some emergency money, Gordon Fox helped us out with emergency money. We built an observation tower and we did some TSI in the forest. One of my interests was the timber standing program, and I was getting $20,000 to do that every year from 1956 on, I think it continued until 1974. Around 7,000 acres we had what was called a pilot management area, where we TSI'd and made timber sales, improving the timber. And that continued until then. But the things that engineers are concerned about in forests, the things that recreationist are concerned all languished because I wasn't supposed to spend much money on them. I had four rangers, we called them rangers but they were GS-7's, mostly worked marking trees for {475}, and we selling them. We made $10,000 sales during the charcoal period during wartime because everybody had needed charcoal. We had a going timber business until, well it slowed up shortly after I took over because the demand for charcoal was gone, there were now sawmills around. So from then until now, the sale of trees has been kind of catch as catch can, and most of the timber stand improvement work we did was merely girdling or appraising trees, not selling them because they were to far from the road or they were to scattered or to few.

Wadsworth, Tape 2, Side 2

Pete: You're the only person that's recognized that?

Wadsworth: Yes, that recognizes the forest in the lower skirts, when we bought clean land and it just came up with trees, now is much richer in the species that are useful than it used to be because of this. Everybody looks at it and it just looks like jungle. They are native trees, most of them, because we didn't plant much. But the forest now, of course the hurricane did some damage in some places, but the forest is made up of more furniture woods and larger species than it had before because we thinned them out. This is one of the things which is completely lost on the present generation because they are unaware of what it was like before. I continued in research and in administration of the forest. Actually I was responsible for the timber management of the forest from 1943, when Upson came, all the way through to 1974 when Juan Munoz was the next supervisor. But I was alone in charge from 1956 to 1974. We had a ranger in the forest, Larry Hill, we had Juan Munoz, and we developed the program in the Virgin Islands. It started in 1950 and it ran on through 1984. We had Bob Mobiles over there, a professional forester, we had nursery, we had a sawmill, and we were interested in having an experimental forest, which we still have of 150 acres, almost all mahogany, natural mahogany that's come up there. Our interest was in getting private land owners to plant trees, most were mahogany so the nursery produced mahogany. The Virgin Islands is full of rather wealthy people who are retired and who are happy to take care of trees, and so was a good opportunity to do something in dry forest. So that program continued. Right now there's nobody over there, but we still have the experimental forest. In 1974 the forest was separated from research again, and the supervisor, Andy Lindquist, was brought from Region 3, he'd been in the regional offices as a range ecologist, (under Region 8, we went back under Region 8) to assist Juan Munoz, a native forester with a degree from North Carolina State in forestry, but didn't have all of the career background that leads to supervisorship. So they brought in Andy Lindquist, a bilingual fellow from the west, to work with him for a year and a half and Andy was excellent, he went back to {43}. Juan Munoz continued as supervisor on the forest until 1985, then we've had other supervisors since then, with it being independent from the research. I wanted to be replaced, Bob Buckman wanted me to work on a book, and I think there were two things there. One, I think he felt we maybe needed a new director and I had felt, like Gus Pearson who voluntarily stepped down as director to continue his research, which I thought was very honorable. He fought with the director for at time

after but that was something else. I thought I would be happier if I stepped down and went on and did research. And so for a long time I was looking for a director and I felt that in Puerto Rico we ought to find someone who was a Puerto Rican. I had written to Ariel Lugo probably in the late 1960's. He had come and did his doctorate work in the forest under Howard Odum, which was a big research program that came up with the AEC to study the effects of gamma radiation on the forest because they were contemplating making a sea level canal across the isthmus of Panama and they wanted to use atomic power. AEC wanted to know what the impacts of the gamma radiation released by the materials they would be using would have on the vegetation. So they came to us and turned over the station to them and they had about 10 years of research of where they actually applied radiation to part of the forest. It had been premeasured and followed it well. When Odum was an ecologist he attracted a whole lot of people, and one of them was Ariel Lugo a student here who went to Chapel Hill and got a Ph.D. under Odum, and went on in the federal government in the states, I think he was with CEQ. I tried to reach him (Lugo) and find out, he was a dynamic young person--Puerto Rican, bilingual, he had done a stint here as Assistant Secretary of Natural Resources, he looked like he was a good person. I tried to reach him, and when I saw him years after writing him I asked him whey he didn't answer, and he said he never got the letter. I think its true because I said I'm looking for a replacement, and he said well tell me a little about it. It was a grade below what he was earning then, but he said I'm very much interested, and so I arranged an interview at that time with Doolittle, who was the research person in Washington. Doolittle said let's get the southern station to look at him, and of course he came in 1978. At that time I relinquished the directorship and since then have gone back to research scientist.

Pete: Is this at all unusual that you picked your successor, in terms of the way the Forest Service works?

Wadsworth: Probably so, although I'm not sure. I have a rather cynical view of the so called Civil Service appointment system, to find out how subjective sometimes it is. I think many times before anything's advertised that the candidate is pretty well settle on, and maybe there's some merit in that, I don't know. Nobody in Washington was going to find such a person and the luck they've had with the supervisors would have been just as well if they hadn't tried. So Lugo came down, Juan was still the supervisor for awhile. The fact that they are both Puerto Ricans did not improve harmony. Juan was a disciple of mine and we got along pretty well. I think its inherent, and though I don't like this, that people who are given high grades and lots of delegation have elbow problems. They see power and they have ideas and they want to proceed in ways that will manifest them, often different from their predecessors. When Juan took over in 1974, it was rather quickly that I could see a digression from what he had done under me and what he was doing as a supervisory person. I was pained by it only to the degree that I felt producing a we/they situation between his people and my people that had never been evident when I was in charge of both, and that still is a problem.

Pete: Was it a cultural situation, that a Puerto Rican has a different image of what authority means than if he'd been raised in the states?

Wadsworth: I don't think, I think its true of the people that have been sent here from the States just as much as the people that were born and brought up here. You're a long way out, you're doing an unusual thing, the rules have to be adapted and you automatically take leeway. You usually have a weak administrative organization that's trying to keep you Christian, and you bend the rules and you get going and you start customs that once inspected by GAO or somebody are not right. So when two people of the Forest Service are down here with independent assignments the question comes up well who in the press represents the Forest Service. This has been one of the arguments. There is the argument within the Forest Service, or national forest people, as to whether research basically has much merit, whether its really good to anybody, people are overpaid, there are all these kinds of internal issues coming in close terms when you're side by side, actually sharing the same building and all this kind of thing. Plus all this, Lugo has proven to be pugilist by nature. He's in a scientific field where he's striving to be the best personally, he's somewhat of an introvert.

Pete: He's a unocologist, that's what he calls himself?

Wadsworth: Yes, he is, and he's been given all kinds of plaudits. As scientist of the year for the Forest Service he's gotten the service award as the top--things pile up quickly. He had a record of 30 publications in

one year. He has been very strong on continuing a personal image with his scientific peers. His great audience to him is big science, NSF. The people now, he's classed global warming and the atmospherics that has become kind of a knife edge in forest research, research generally. He wants the forest to be a part of the world-wide network, watching change. NASA and he are playing footsie in ways I'm not fully aware of. This is producing dividends because he does get invitations to go everywhere and he's on all kinds of boards. This is one of the jobs of a director, I think. I think he makes the institute highly visible. I feel, one, that I was able to get a Puerto Rican to replace me. I think he's the best one in view for the job. Unlike some of my peers here am pretty soft on sub efficiencies that exist, everybody has them. I rather feel that, well okay, suppose you don't like the guy. Who else would you put in his place? Nobody comes forth. My role since I ceased to be director, of course, I had the assignment from Buckman for the book and every time he saw me he {175}.

Pete: I interviewed Bob a few months ago and he said ask Frank about the book.

Wadsworth: Well, Bob's a blessed soul. {178} and I would visit him and we'd both had known him for years. He's one of the finest people around. He was ruthless with me on it, and I think he knew he had to be. He felt we would never finish. It's almost a correct prediction the way things are. The book involved a stay in Oxford, and for years I was authorized to spend half of the day at home to get away from things so I came in at noon in those days, having worked at home on the documents. I've had probably 20 different clerks typing stuff. Of course, originally it wasn't on a computer but now it is, and that caused me doing it two or three times. It's gone through two editors and its in the hands of a third one now. I don't know what to say about the future of it but I've kind of washed my hands of the deep cloud that Buckman put on my head and left there when I didn't have it finished. The things that I think I can do for it are minor except what this editor comes up with and the editor has given me a suggestion that he's probably going to shake it pretty much. No editor accepts a job without making changes, I guess. One of the comments that came up is that the bibliography is shorter than 80 pages, and that seems too much. And I said well, I can always retire, just leave it and you can do what you want with it. But I've had a request from Cornell for the bibliography alone. They're doing a global database of some kind, which they heard about this and they want it. The bibliography covers much more than the literature cited. I included everything in it that I think somebody ought to look at, and the high point is in the 60's, not because I'm not alert to what's going on since, I am, but its all rehash and very little new stuff. There are people that don't like to hear that, but I think that's a fact. There are some very fine work done in the 20's and 30's, some in India and Malaysia that the ecologist aren't even up to yet. They worked mangrove and solved problems of crabs and tide. A fellow by the name of Watson found that book, its in our library. He said I was astounded when I saw that book. We haven't even started to do research on mangroves while I was there. They worked on it and found how to shift the one species to another and increase growth, things that we ecologist think are way in the future.

Pete: Let's backtrack just to touch base with some items on the outline, and the outline is a suggestion. You may not feel that all these things are important. But the Washington office asked me to ask this question on the history of land use in Puerto Rico. I don't know how significant that is to the forester service role, but let's respond to the request.

Wadsworth: Yeah, alright. Puerto Rico was settled and but until about 1800 the population was small and coastal. In 1815 the King of Spain created what was called the {234}, which is like a homestead plan, giving 200 acres roughly to bonafide settlers and from 1820 until 1880, more or less, there was a standing board, you might say like our BLM--what ever you want to call it, the lead office--and the island was settled. And the deeds on the rural areas tell the history of when the first claim was made of those lands, in the deep forest areas they range in the 70's and 80' of the last century. The ones surrounding the forest are that way. And the King of Spain created forest reserves in 1876, one of which was the Luquillo Mountains. But a curious thing is that same year on July 4, which is a famous day with us, he conceded to a French privateer who had captured the Balearic Islands for Spain, four leguas of land in the Luquillo Mountains. I'm guessing its 10,000 acres, I don't know how much. And that Duke, he gave him the name of Duke of {Moncreon 260}, that Duke kept that property until 1829, it was in 1776. But the Luquillo Forest, when in 1898 when the U.S. came here was much larger than was claimed by the government. That is, part of it was already private around the outside {267 } the sawmills. In 1898 a law was passed requiring the federal government to set aside from the Spanish crown lands, those lands which were needed for federal purposes, and they had to

do it before 1903. Theodore Roosevelt set aside the forest in 1903. John Gifford came down from Florida, he was in the university of something there, a forester, came down and surveyed area or at least looked at it. The best he could do was a latitude/longitude square, which he said looks to me like its private, its good forest land, and so forth. So that was the original proclamation and John made a 2 look like a 5 in one of the latitude/longitude and left out on the east side a lot of good land. Well, that became a purchase unit because we wanted to get it. We didn't claim it so it went to the commonwealth government, Puerto Rican government. Puerto Rican government then conceded to us free gratis 1500 additional acres, which was the public land in that unit. We started with 12,400 acres and with that additional unit became 14,000 something. That's all we had until the CC came. When the CC came we had a big acquisition program and built it up to the present acreage, which is 48,000, doubling the acres by purchase. The land all around the outside. Well, Puerto Rico became deforested progressively late in the last century. Coffee was a big deforestation cause, coffee was produced in the mountains and under tree shade. So they planted magumanous trees over the coffee having eliminated the forest, and in those areas of course the people lived and they had clearings where they raised root vegetables, corn, beans, squash, a variety of things. Before I came was the low point of the forest. By the time I came less than one percent of island was virgin forest. And the Soil Conservation Service had a policy of subsidizing people who would clear the forest for agriculture, which was considered conquering nature. And they were going to the tops of hills if it had continued. Well, it stopped because the people moved to the cities and other changes stopped it. It wasn't because they couldn't, but they didn't. So the island was secondary forest. The smallest forested area is around 15 percent of the island, I think, and a lot of that was coffee shade. So it was natural forest. It's come up now at about 40 percent because people have left inner islands for Washington, New York or somewhere, and so the secondary forest had coming roaring back, bird life has improved, water quality has improved in the upper lands, not so much in the lower lands because there's continually organization and things going on down below. I as a forester was concerned with the public policies of recognizing that deforestation constituted development and I became very active in land use planting with the Planting Board, the Department of Agriculture, I served on committees continuously pleading for forest lands. And in effect came up with plan which is still on the books that roughly 50 percent of the island should be forest, trees of some kind including orchards. Of that 50 percent slightly more than half should be left entirely alone for habitat, water, ecology, whatever, recreation. And the other 40 percent should produce wood. And that, I felt, pine was the first crop, mahogany was the second and between those I worked out employment for 30,000 people, several million dollars a year of gross value, {365} in the people in the country all kinds of benefits. These figures are still in a bill that was submitted to legislature last year by the Chamber of Commerce, which is behind this. They believe in developing local timber as a crop, in spite of the fact that many of the importers are in the Chamber. The group has prevailed and they are probably going to go back on this because the Statehood party will be more sympathetic. So there is a proven land use that is happening in some places, many spots where land has been damaged--coastal areas and all that, but the island is better forest-wise than it probably was at the beginning of the century in terms of pure acreage. It has a higher percentage of land covered by trees than U.S. There its about 29%, of course you know, many of the lands are not tree lands they are desert or plains.

Pete: Is there a problem with wood poaching?

Wadsworth: Not much because today wood is not used for fuel. Farmers and rural people are building concrete blocks. Sure they go out into the woods and cut some poles for pole hands or a pole for a shed of some kind. The forest by and large, our own problems on the national forest with trespassers are all gone except misunderstanding by a neighbor that maybe moves a boundary. We used to have cattle trespass and theft of wood. We'd take the cows down to the town and they'd put them in jail, and the guy would have to pay to get his cow back, and he'd have to pay for feeding if he didn't go and get it right away, and it worked. Kept the cows out. The law here is that if you have the animals you have to have fencing and we don't have animals so the neighbors have to do the fencing. We assisted by providing the posts, that's on the boundaries, but they had to provide the wire and keep it up. This is not a problem today, its past, because our neighbors are not farmers as much as they are recreationist or city people who have second home. The boundary of the forest is a nice place to be, nice view, and its cool, and the land is valuable. You can't buy it. So that change has taken place. The plans I had for acquisition at one time called for something like 65,000 acres. It was the whole upland, figuring it was {424} and shouldn't be used for agriculture and we weren't using it for tourism in those days and I felt that ultimately if we ever came back to the acquisition program we

had with the CC we should go there. My thesis brought that out. That was a dream but its never going to happen because the land values gone up. I think that land use point, the Forest Service has been very active always in land use matters on the island and were called upon by the state government to attend committee meetings and to assist. We worked with the planning board in selecting 72 sites on the island that were physically attractive enough so that they ought to be protected from misuse and some of that is in regulations. There are no great triumphs, you might say in this, but we were listened to enough so that they didn't exclude and we have always worked with agricultural planning as well, because in the Agriculture Department recognizes more than they use to that forest land use is allied with agriculture and useful and not to be knocked down as they thought before.

The last item under there is another subject we haven't talked about. When the Forest Service sent the first supervisor here in 1917, which was 14 years after the national forest was established without any supervision all that time, it was at the insistence of the state government. The governor, who was a person from the states, wrote repeatedly from the 1914-15 period that he was getting complaints from people that somebody was going in there and taking timber and they were making charcoal in the national forest and they wanted a supervisor. A study was made in 1912 which said that the amount of land was metes and bounds surveys, no body knew where the boundaries were and the area was small and they recommended against continuing with the national forest there.

Pete: I'm confused. What was the impetus of the creation of the national forest when the agency had no interest in actually sending someone down there? There must have been some political reason or something happened.

Wadsworth: Well, you see, it was one of Theodore Roosevelt's 40,000 million acre period with Pinchot and all those. You grab what you can. I assume that

Wadsworth, Tape 3, Side 1, December 1992

FLW: There was report in 1905 describing the national forest and its values and so forth. Then, presumably, it was a preliminary to taking it over and administering it. Well, nothing happened all the way until 1912 when Peters and Patton or somebody, two people, came down they recommended against it--it was not a {tannible 007} forest. The governor insisted until Murphy came down in 1916, his reports in 1916 so he probably came down in 1915, and he recommended that we go ahead. So the Forest Service said to the {012} government, you have an engineering department, we'll ask you to survey it and when you survey it we'll put a supervisor down there. So in 1916 we made the first study and came up with the 12,433 acres, and a map of it. Curiously at an earlier date, somebody had put monuments on the big square. They are still to be found, they are one of these square cans with concrete and a number on it. But they were not related to exact ownership, so they were just an outside boundary within which our lands would become the forest. We still had it surveyed and all the people outside, they had to go to every owner and determine whether they had complied with the conditions of their concessions from the Spanish government, which was they were to have 25 percent of the land cleared and in agricultural crops. And a few of them did not comply. So they were returned and given to the federal government as crown land. The people were not kicked off, that was not a responsibility of the commonwealth government. So we inherited some of the lands around the edge had people on them, and we left them on there under permit, gave them permits to continuing what they were doing--there was no way to get them off this land. Later, when we acquired land under CCC, the owners were prepared to sell, it was a time when we were buying land for $3 an acre in the states and it was cheap here. But they didn't have the money to drive their laborers off the land, they were working on the land and making a profit, plants, coffee, and other crops. We absorbed the land, we acquired it with the people on it. Holridge, my predecessor came in 1931, laid out a system called the Parcelero System in which he assigned to these people 12 acres, a parcel. They were to work two acres. They could have cattle on the rest. That two acres they were to plant food crops and we would interplant trees, and when the trees came up they'd move to another two acres. And his thought was they'd go round on a cycle and when they got back they'd harvest the trees and do it again. It was a forward looking plan, it was in many ways way ahead of its time. It was too ambitious in the sense that if you had gone around, the trees were up in two or three years so you have to keep moving and you wouldn't have more than 15 to 20 years. The land would be okay but the trees wouldn't be harvestable, they'd be too small still. The Parcelero System was put in and the

supervisor was so enthusiastic about it that one of the reports on it indicated that they were going to introduce more families to the forest to help with the population problem here. They anticipated that in the federal and state forests they would have 2,000 families. I mentioned the state forest, I should bring that in because the first supervisor, Emory Bruner, came down in 1917 and by 1918 he not only got a forest law passed, a local forest law which is a good one, but it provided for the reservation of a lot of land elsewhere on the island as state forest. The island of Mona, the mangroves throughout the coast, the Marakai Forest, and the Guanica Forest were all set aside at that time. So we had a state forest system as of 1918. In 1922 additional areas were included, and Bill Kramer took over in 1922. So a state forest system was built up and the CC time, we bought new units of land that were in go-back agriculture land, and at the end of CCC the federal government donated them to the state and created was is now the state forest system of 14 state forests.

HKS: The map of Puerto Rico I saw up on the second floor says forest reserves, those are state forests?

FLW: That's right. Their aggregate system is twice our acreage now. Brunner in the forest law said that the state forester shall be a graduate forester. And at that time there were none except himself. So he was appoint state forester and the agencies were the same. He had a responsibility to the Secretary of Agriculture locally and to the Forest Service in Atlanta, which was in Philadelphia in the first place but in Atlanta later. That marriage continued until 1953, from 1918 to 1953 we were the same agency and when I came as a forester with a knowledge about timber was put in charge of timber management on all the state forest as well as the federal. There was no distinction. Then in 1953 when the split came there was a state forester appointed under the Department of Agriculture locally and they went their way. Well, there was long debate as whether we should break off or not, some of us and I was one, felt that Bosworth, our last supervisor, was poor and so weak that he hadn't prepared them to do the job that they were going to have to do including complying with federal regulations. They had a state and private program under the federal government that they had to fill out forms and do all kinds of things that he had always done for them. I thought it was poor time to do this, but it happened, and of course they've been going separately ever since. The relationships between us and them since then are interesting because when Murray came and the supervisors since, we are under strict discipline from Atlanta and more so today than ever, our time is soaked with complying with a whole bunch of procedures and accomplishments that are set up as goals, not necessarily bad, but the state forest system is looked upon as not as a national forest responsibility but a state and private forest responsibility of the Forest Service, and so Atlanta was dealing independently with the state forester here, as I guess they do throughout the south. There was a lot of early flippage and this didn't work well, nobody understood each other, there was a language problem and distance. So they assigned a state and private person to the forest here, who was the dogleg. Later state and private decided that wasn't working so they withdrew it and today the relationships between the state forest system and the Federal Forest Service are primarily through Atlanta, not through us. Concurrent with that, the research, which when I was in charge we worked the state forest just as though it were a garden of our own--we had studies on every state forest, has contracted. Many of those studies were completed and our liaison with the state has diminished to a point that research on the state forest is not as integral as it was. We have some ecological research in the dry forest and a few other things, but following of the plantations and good timber management--if its done at all it because one person over there was protege of mine and I meet, we talk about it. But I have no authority. Two years ago I asked permission of the southern station to spend one day a week with the state forest department to work on management planning, which really had nothing to do with research, and it was not very well received in New Orleans. The state persisted and sent a good letter and they let me do it. More recently I've been on the management team that is revising the national forest plan, that's taken all my time. So for a year I haven't gone there and nobody else has. And research today is not facing any problems the state has asked us to work on, that's no exaggeration. Most of us don't know personally the employees on the force or in the state organization and the national forest, Hablo--the ranger and now the supervisor, has attended some of the state forest staff meetings recently and we've invited them to our forest one of the months they meet. I think its fair to say that the relationships are not hot, they are friendly. But we do things on such a different scale and a higher financial level that I think what rubs off is not very much. We have hired away some of their people. I hated to do this, when I was in charge--yet it's not fair to their employees just because they are willing to work there to refuse them a better opportunity, so the person in charge of recreation up on the forest has recently been spirited away from the state and they got one or two other people. One has a Ph.D. that I think will end up with us. In effect, their salaries are so

low that they are losing the people the minute they become well trained. The rationale when it comes to this unless they lose their people they will never raise the salaries, goes both ways. They are trapped in a pattern which is much broader than forestry, I mean salaries generally are at a certain level and so forestry can't just break through and suddenly pay better salaries without having to change the whole personnel levels here. It is a very sore point we're talking here. Lugo and I, both of us, are very worried about this and we see visitors coming here from other countries, forest services that are struggling and the state forest service is much more similar with what they are faced with than we are, as we've gotten support and have big staff and doing all kinds of things. We're trampling the forest almost with people. So if you bring the people to show them how to do it well we do it better than they can afford and the states doing it poorer than they should right under our noses and it creates a big question mark in the minds of visitors.

HKS: Is it as simple as that the bureaucracy has finally caught up, its taken private forest in Atlanta, would you say its different sets of priorities? What happened?

FLW: State and private is not focused on the management of state forest, its focused on farms and on private land and urban forestry, you know, all kinds of broader things. Jack Alcock as regional forester, has a lot to offer this state department in how to administer, plan and run its lands. But his people that are in timber management and the administrative side of it have no assignment in state forest, they don't see it. And most of the states are so jealous they don't want them. The southern states are belligerent about federal meddling, you know. So it doesn't happen elsewhere, and there's a language barrier which is important because still people aren't very good in English. So it doesn't happen. Well, we're the ones, the institute now with Pablo and the national forest, are the only ones that are the indicated linkage here. We've got to do it, and Lugo and I are talking about this. And I think Pablo wants to. I think the regional forester would give his blessing. If we put it together and show how it can be done without maybe fouling up the general flow of our work.

So the Caribbean National Forest has been, since 1903, a presidential proclamation forest, its not a congressionally established forest, and the wilderness brought this up to me when they visited us and said you ought to get that done because

HKS: Didn't the National Forestry Management Act of 1976 deal with that? I thought that in 1976 all national forests were made permanent by act of congress.

FLW: Maybe so. I hope you're right. What the wilderness people told me then, which was before that act, was that any president could undo it. There might be pressures from Puerto Rico to ask the president to do so from us poor guys down here, you need the forest. And there have been rumbles of that kind. You may be right, I wouldn't be surprised because I know that McGuire was that National Forest Management Act and it did a lot of good things.

I'm not sure on your item 2, there much that could be added. Is there some item there that you want more on?

HKS: No, I think you've dealt fairly with all of this. And under the next section, you've talked about the issues and needs already at that time. Mainly you were focusing on issues of needs in Puerto Rico, it wasn't some concept of tropical forestry, it was what Puerto Rico needed. Plantations were not surviving, the need to establish a research program. Was there anything broader than that?

FLW: Well, there is. Beven, the original director here made early contact with the British in Trinidad. And Trinidad was the earliest British forestry outpost in the western tropics. In 1913 through brought in teak, and they've been planting it ever since, and they brought in the best teak there is, by chance. Came from {235} and Burma, and all the teak that has been brought since has been worse. Their teak has gone all over the hemisphere, everybody has gotten their teak from Trinidad. Well, the British had five conservators there, all of them trained foresters, one research person. Beven made the contact and they hit it off well. So the British were kind of hovering over it, the British colonies--the Lesser Antilles all the way up to the Bahamas, by sending a forester around once a year to recommend things, but there were no forest departments in those islands and most of them are kind of forested because they had a little bit of agriculture on the coast

but the populations were small. We have a whole set in our library of island reports made by British people from Trinidad who came and visited and did things. One person was a good ecologist there, John Beard, went to each island and made profiled diagrams and virgin stands and a lot of background. We saw a kind of a gingerly approach because we didn't want to appear as newcomers to be butting in to what they were doing, and they looked a lot smarter than we, they'd been all over the world these people and they knew species from Africa and things we didn't know anything about. The Dominican Republic was a wilderness to us. Cuba had its own forest department, we made contact with people there, we had a big meeting in 1946 in Trinidad. Representatives from Cuba and from the Netherlands and from the British Islands with a research plan for the whole Caribbean made out, publications we've still got. Every country contributed to it, and when Lugo organized recently his Caribbean foresters to come together once a year to meet, we're paying for it, and they do it. He was floored when saw it--we can't do anything that big. And people just sat down and did it in the meeting. We sat there for a week and everybody put together what their problems were. Obviously many of the problems are common. Immediately after war I was suddenly called upon to travel a lot. I was reputed to have the language and I didn't seem to be wanting to leave here, and the Forest Service got into the United Nations activities, particularly the Latin American Forestry Commission, and the North American Forestry Commission, Mexico, our OFAR, the Point Four programs, FAO--all of those agencies blossomed out with meetings. They were loaded with people who didn't speak English and they were tropical. And I went, I think I went to 14 meetings of the Latin American Forestry Commission, they weren't even every year. I headed the research committee for 12 years of that. I represented the U.S. in meetings of this kind often as an official representative, maybe with somebody. They were in Chile, they were in Argentina, Brazil, Central America, the West Indies. And it got to the point that I wasn't here all the time, of course, I had a supervisor of the forest and I had one or two research people and so the show moved along. I found myself getting more involved in non-research administrative work, in technology transfer. From the very beginning I believe in the library and we grabbed everything we could. We set up a procedure where the librarian prepared requisitions. At the end of the year if we had any funds we bought them all, or as much as we could. I didn't let things slip behind, I made contacts with people so the library got going. Traveling abroad, Pete, I realized that you couldn't solve the problems purely with research. Many of the meetings I went to were research meetings, but a lot of them weren't, and the people who came from other countries weren't researchers. And their problems, which were everyday immediate problems, very serious ones, looked to me like it called more for common sense and application than research.
HKS: What were the basic problems they had, just lack of infrastructure, something like that?

FLW: They had total lack of interests and knowledge on the part of the decision makers with regard to forest. Forest was looked upon as an obstacle to development, something to get rid of. They were even foresters, some of them. They were some kind of diplomatic people, the only ones they could send to some of these meetings because it too far away. They'd come to meetings and they would recite poetry and they'd do all kinds of things, it didn't help. You were seeing an absolute incomprehension from many countries, particularly Nicaragua, the Guanas, and places where there were small populations and they were making a living by getting rid of trees and putting things in their place. Meeting after meeting were to bring to attention to the decisions makers these problems. The problems were the need to preserve forests, the need to select, and the need to protect animals, and the need to limit the cutting to a rational amount. We didn't use sustainability all the time, but that was behind our thinking. We had a lot of missionary guys, many of them were staying in their responsible positions for a long time. The chief forester of Peru lasted 19 years. I had met with him one time and we were sitting around in southern Mexico, and I asked him what does he lay his longevity to, nobody else could last that long. They'd get thrown of politics, and so forth. And he said, well, every time I had a difficult decision I made it, and I've broken every rule my mother ever taught me at one time or another, but at the time I did it I looked to the alternatives and we didn't have anybody else that had any forestry. I was the only one in the country. I just thought I better hang in there. Some of them would say, well, my only consolation is that I think it could have been worse if I hadn't been there. You know, your backs to the wall when you feel that way. That took me away from feeling that research was the naval of the earth. I felt that the mysteries of why one tree grew faster than another, which had perplexed me all my life, was something that only research could find out. And when we did find out we would make the native forest produce like the plantations if they did it. But on the other hand, finding that out wasn't near as urgent as getting the damn ship afloat. I see that in every country we had a candle lit, and that there was a revolving educational ripple effect in the community to where now of course we have the publics looking at us, not too well informed, but they were being very critical of us which is what's come out of this. All of this led me to be

less of a researcher in spirit than I had been. By the time I left the directorship, I had two incoming baskets, one was research and one was administration. And the administration business always had a deadline. By next Thursday they were going to do something up there and I better do something up there and I better either stop it or agree to it. And the research stuff looked like, well if I didn't get the publication out this month I might next. That difference, and that stuff piled up and when did this stuff.

HKS: What was the reaction of the Washington office about that?
FLW: Well, I was pardoned, you might say, by anybody that knew about it. Windy Ayre was the guy that came down. Bert Lexen came down once. I had a period of 13 years there in which I no visitation from Washington at all. You can certainly make a lot of errors in that period of time. You can get totally derailed and not know it. But I was using a Forest Service Manual, which was a single volume which the pages could come out of it, and it was written for the U.S. as a whole. I wasn't bound by any regional supplements, which were more specific. And I marveled at that document because it was like a bible. You could go to it and find a pertinent case or a loop hole for almost anything you wanted to do. And they deliberately made it so that the deliberation, the decision making was delegated way out in the field. It was vague enough so that it was your interpretation, under your conditions. You wouldn't go to jail with quite a lot of differences of how you solved those problems. One of the cases that came was I got rid of a bunch of summer homes and this was like pulling teeth. I got rid of about 14 of them. I did it on the grounds that they weren't maintaining them well enough. I really wanted to get rid of them because they were in the wrong place and they vandalism and all kinds of things. And the people challenged me. They went all the way to the Secretary of Agriculture--I had no right to do this. There were all on annual permits, and the annual permits said at the end of the period you might get renewal but they didn't promise it, so I could get rid of them. Well, I made concessions and gave them two or three years to continue using the place for something. I went and checked their electrical meters and found out they weren't using electricity at all so I knew they weren't there at all and that was against the rules. They were supposed to use it because someone else could come and use the property if they didn't. So I never had any trouble. The chief always delegated right back to me, they's say what's the story on this, they always backed me and I always got out of it alright. But I just leaned on the manual, I learned to believe in the manual. One time with an inspection of the Southern Station, Tom Nelson who was the deputy chief, we were someplace in the South and at night we came out to a Holiday Inn and we were swimming. And I mentioned something, I'm sure the manual doesn't say that. And Tom said, what's this about the manual? And I said, well, the manual is a guidebook we use it. Tom said, I've never used it yet and never intend to. He was the chief! I believe in the manual, I'm enough of a bureaucrat so I don't think its always paper. It served me very well during that period because although we were deficient in money and the minute I was replaced by Juan, the budget shot from $65,000 up to $2,000,000 in about three years. They came in with strength with project money and engineering and everything else. But that was a period which . . . and it made me a hybrid from the researchers viewpoint. I spend more time today, I think, critically looking at what research is doing than participating in it. My money comes from concrete timber management research. Tom Ellis, the director that just retired at the Southern Station and I have talked a lot. He was in administration for awhile.

Tape 3, Side 2

HKS: Ellis was concerned?

FLW: Yes, concerned about the proportion of research that's truly user oriented versus the "oh, and ah, let's find out" sort of thing, curiosity oriented. I think we both believe in both kinds.

HKS: The old basic versus the applied research?

FLW: Right, that's the same thing. I think that somebody coming in like Senator Proxmier would say this is an ivory tower. He might do it after interviewing all of us at length and seeing what we think and how we feel, and what our priorities are. I feel that we cannot afford that. The clients are too urgent, the time is too short before we lose the forest to do something about it. I find myself, I think, at odds with the director on this because of his pension to get his jollies from his scientific peers, most of whom are far more academic than we are. The issues abroad, really I would say, were not recognized as this as well as today, but they were

social. They were how do we awaken our people to what's happening and the seriousness of it, then the alternatives. Latin America's actually full of reserves that were set aside on paper and never located on the ground, and now have been lost track of. Most countries have good legislation and it was easy to get passed because people had a cavalier view about forestry and they never authorized enough money to the agency to enforce it. We were dealing with situations, I guess primitive is the word. Learning how to make a tree grow faster or which tree to plant to me pales in insignificance to somehow addressing that kind of an issue. Many of these countries were heavily dependent upon the income from their forests. There was a big part of the {32}, and yet they were just milking it right to the end, you know. Its happened in Belize, some other countries, Mexico. I came away from the Latin American forestry emission meetings feeling that research was one category in which to deal with, and we had a research committee. The rest of it was lying. Countries coming and telling the story of bragging on what little they've done and telling all the thing that have got to be done and the help they need. And of course this led into the Point 4 Program, the technical assistance and all those things, and we were involved in a lot of that, a lot of the planning. I feel too little in Washington's decisions. I wrote Bob Buckman and I said that now finally the U.S. has awakened up to the tropical forest problems and we've been left at the church. They bypassed us. They gave the money to the countries, they gave the money to the universities, but they didn't give it to us. I think that's maybe that's enough on that subject unless you need more.

HKS: No, that's good.

FLW: On the status of tropical forest research. In Trinidad, which was what you might say was the spearhead, the swing officer--they had five conservators and they had four areas they would serve in and they were stationed in these four areas. The fifth guy was assigned research, he was a swing. But there was always about a six month leave for somebody, so the 5th one became the 4th one and very little research of continuity was done. Once in a while they had a good research man like Jon Beard who wailed about this, was sad about it because he couldn't continue what he started. But by and large the other officers were not research people. So even in Trinidad they tried a lot of things shooting from the hip. So did we under CCC. There was so little research that the number of errors were great. At one time I computed here that of 50 trees that we've tried, exotics and natives, one came out promising. The ratio is a little better today because we had more information before we tried them. In many countries the same is happening. We found it impossible to establish a bridge head to another research in most countries. Even in Brazil we went to a railroad, {70} in San Palo, which had a research group, they brought in Eucalyptus and worked with it for fuel with trains. The American Institute of Agricultural Sciences began in {73}, Costa Rica, didn't have a forestry program but they had an agricultural program and they had a library, and we established a bridgehead with them. The University of the Andes started a forestry school, and the {of Brazil 76} had a forestry school. Kilometer 47, between Rio and San Palo, had a forestry school. In Chile there's a forestry school. And Argentina had only agronomist in the forestry department until 10 years ago. And these were the other ends of the bridges that we might have established. Our Caribbean forester went to all of them, they got to know us, they wrote us articles. If you'll go back through that you'll find very little evidence of what, today, you'd call research. They went and visited the place and this is what they found, kind of thing, and its descriptive and new and we thought it merit prize when we published it. I had visions in the early days of our sending a roving reporter throughout the region, thought of the whole of Latin America, carrying with him copies of things we'd published or information we had, reports, and bringing back problems we weren't aware of, to help us orient our research, assuming we would be the mother of all this reaping. It was kind of a fantasy I guess, because, we never could sell Washington on financing such a position, and I have my suspicions we would have had a hard time staffing it because right now our people who do go out a lot are getting hell at home. The wives are left here, the environment, the high crime, and kids. They come back from their trip and they've got orders to go somewhere else already, and its making them leave and go back to the states.

HKS: It's interesting because, certainly at Duke, there's a romance about tropical forestry. The student's are just . . . it's one of the most popular programs. This is a more personal issue, what's it really like if you are involved in international forestry these days.

FLW: Yes, I had a very nice opportunity talk to the student body at Iowa State with the Forest Service about two years ago. It started at 7:00 p.m. and ended at 11:30 p.m. The room was absolutely packed, the whole forestry school, all ages. My subject was "Your Role in Tropical Forestry". For all I know the faculty goosed

them to go, I don't know, but the reaction was very striking. I talked about the problems of the tropics, how they were different from ours. How they were more severe. I made the point that Pinchot would never have been a success in the tropics, he couldn't have dealt with the people that we train, its {117} like this one are sending out there and throwing them to the wolves. It wouldn't have worked. But in this room, there are some people, almost none of you, but there are some people that could make a real difference. You have to have characteristics you may not even know you have. You've got to want to try it, and for most of you I wouldn't advise it, but if you are interested, for God's sake try the Peace Corp. And if you don't like it, you've saved yourself and all the rest of us a lot of money and time. If you do like it, I hope you stay on, because it's the stay-outters that make the difference. Not the ones who come back and go back into the woodwork and disappear. And I had people, I talked maybe a couple of hours, 9:00 or so, and people were lined up and they wanted to know what to do, where did they get applications. These are kids from off dairy farms and corn in Iowa, you know. The institution's very provincial in that sense. I was tremendously impressed, the number of women was high. I think it's our job now to create the avenue for this, because as you say, students are thrilled with the thought of it, and much of it goes up in smoke when they get close to it. Language is one of the things I tell them--get a language, because you won't like it if you don't, you won't stay. The people I brought here, and I brought 20 scientist here and the minute they didn't get the language I knew they weren't going to stay. I was more concerned with their wives than I was with them, and we made one deal which was a good one where we told the man, okay, you qualify, we're interested in you, we'll bring you for a week on a consultancy on the condition that you bring your wife at your expense and our wives will take her and show the schools, stores, houses, everything and you'll see us. And if at the end of that week both likes aren't green we will have both done ourselves a big favor, because it costs us $30,000 just to put a person on here and get started. And if the person wants to go back or if the wife wants to go back at the end of six months, you know. That's maybe something far along. Research still, in the Tropics, is extremely concentrated in a few places. There is another area every bit as much ivory towered today as we may be, and that is the biggest the all in Maylasia {157}. They allege they have 47 Ph.D.'s, and the states of Maylasia which include Sarawak and Sabah, Kuala Lumpur have their own research organization because they can get nothing out of Kuala Lumpur. It doesn't mean that Kuala Lumpur is doing nothing on the peninsula where it's located, but the documents they we see come out of it are highly academic and so sophisticated that you know they don't fit the ground. And Malaysia, although its heavily populated still are straightforward, simple, people resource relationship that is not perfect. You would think that they would the forefront. They have a very good director, Dr. Salya. He's been the head of {169} after Buckman. CGIAR is now entering into forest research. This is the source of the miracle wheat, corn. It's the Consulting Group in Agricultural Research, started by Rockefeller years ago, and they developed the miracle crops, the green revolution, and so forth. Buckman was successful in getting them to take on forestry. They have a $350 million annual stipend, which is stable, and it's something that's needed for research, he thought. They are having a very hard time picking. . . they're going to have a center in Indonesia, a central office. But they want to add what they call nodes to our regional, built on existing institutions, and they've got some standards that they have to meet, and they're having an awful time. Even Cartier is not acceptable to them. We probably are, but the International Institute of Agriculture Research in {191} will not qualify. I don't know about {191}, Deli in India probably will. Research in governments that are faced with poverty and urgent problems of health, education, development--if I were in their legislatures I wouldn't put much money in research either--forest research. Saying, you know, that's a generation ahead of the things we've got to do this week. I think it's highly understandable. My belief that research will progress to the degree it can sneak in integrally as a part of work that has more urgent promising results on an empirical basis. Got to plant that watershed, just grab a tree or 10 trees and put them up there and let the researchers study whether we did it right or not. That's what we did with CCC here. My ten years after CCC, had it been before, would have saved some money. I think almost always the doers, the swashbuckler Errol Flynns, shoot from the hip and researchers have a hard time even finding out what happened and following it. I think maybe that's not so bad, because there are some researchers who would never make a decision. We haven't got enough information. I remember Harry Champion, a great British forester, answering that question in a way I quoted. "It is true that we do not know all we need to know to make these decisions, it is true that we never will, and it's true that we must move ahead and do the best we can with all the information we have and weight what we get to make the next decision better, and you cannot stop." That's what he did with the {221}. The Indians were complaining about the pure {223} in the 1930's. Destroying the land, all that kind of stuff. Research today still is a tough one. In Brazil we have relationships with two research organizations that are good size {228}, which is in Bel,m, and covers the whole Amazon. And INPA, which is a research station at Manaus, much more specific

and more profound. EMBRAPA, I think, is more concerned with applied research than INPA with basic research. And I find that we're finding better relationships with INPA than we are EMBRAPA. But neither of them is often more than in-kind, quid pro quo. We're not getting a separate vehicle or computer. EMBRAPA is a regional research organization for all of the Amazon region, and the other one is attached to the University of Manaus, I guess. We're working them. There's a national forest at Santa {251} that has an extremely good supervisor, kind of a fair haired, in their whole organization is five million acres, 26 bodies, most of which are barefoot to take them. We go down there, this may be the wrong time to talk about this, and we find extremely warm relations. Our people are learning Portuguese, some of them know it quite well, But there's no problem between Spanish and Portuguese. They come out with us, they give us their time over there, and our people all come back encouraged. Yet, when we set up a project we assume that Brazil is at least as interested, if it's a good project as we are, and ought to share at least on a 50/50 basis. Well, in any reasonable project you can't share entirely with lights and desks, and use of a pickup part time. It calls for additional input. International assistance, if its proven nothing else, it's proven that if the country doesn't come along on it when you leave it falls like a waterfall and nothing happens and we're blamed for what happens. This is a rule you learn as a child, you know, if you don't show any interest in something you won't have any. Well, we're not getting this. These people are at least two levels below the high decision in Brazil. The assistant chief of the Forest Service, the associate chief, at the real meeting signed some kind of hugh document--Memorandum of Understanding, at the top in Brazil. Which looked like, was the kind of thing our counterparts would look at and say, well you've agreed to this, now we need the support. But our people are still working under the illusion that if they don't we better or we won't get it done. There maybe a certain amount of this that one can justify, merely to prove we're sincere. I think with what we do, they won't. Whey should they as long as the negotiation will allow that much leeway. There are plenty of cases of where {296} have done too much and have left a vacuum. They couldn't be supported. I don't know if the canal is a case, the Panama canal, where if we pull out the engineers of Panama won't do what we did, cause we've always done it and the gap in there will come up with sediment, there will be less bottoms for ships, stuff like that. This is a serious problem, and I think with research we're behind a bigger eight ball because on the national forest you could go out and plant trees or TSI it, manage it, and cut it and produce almost immediate visible goodies, which with research you can't do. In the ring which we're fighting for resources research is not in a favorite position. I think that the status is that one of the things that is outstanding about us is the vast relief around us that we are so much better endowed, whatever the poverty of our program, than others for purely research. I think its incumbent on us to carry a lot of the load, not necessarily what I was saying earlier is avoid other people, but we ought to be dealing with truly original problems and not just purely Puerto Rican problems, that's one of the things that seems quite clear. Because nobody else will do it. We do know that when we published a journal and we publish our reports they go and I've found people who were trying this on the things we've done, so it isn't a complete impasse, it's something that could pay off.

HKS: You've mentioned a lot of names, I shouldn't say a lot, but generally the names you've mentioned I haven't heard of, their British. The only two, as you can see from my outline that I even though about, were Tom Gill and Sam Record. Were they significant to you? Did you know either of them?

FLW: I knew Sam Record only by correspondence, never met him. I remembered him--he was Mr. Wood, and got that journal they had, Tropical Woods, which we have a complete set here. His wood collection went to Madison. I'm sad to think that Yale didn't give it to him, but times change. Sam Record and Hess, the book that they published, the second body--that last one, was used way after it had been printed. As a source of some information about species or about size--like Zon & Sparhawk way back in 1924 gave a book on the forest resources of the world where they tried to indicate how much acreage there was in countries, people quoting it as if it was good--well, that's all there was.

HKS: That book by Zon & Sparhawk is still quoted because its the only one that dealt in one place all that stuff.

FLW: That's right, and Zon & Sparhawk in my view, I think they were worldly peoples, it seemed to me that Lowdermilk was the guy that was outpost {373}, but I know what it was that moved them to do that. They must have gotten some support for it and probably did a little traveling. But anyway, I think that Record made a name for Yale and it was a center for tropical forestry such as we knew it, it was all {381}. The time I

looked for a Ph.D. professor, Michigan was the only on that had one, because Record was there but I was not in utilization.

HKS: Who at Michigan?

FLW: John Matthews, the one that wrote the management book on American {386}. He worked in the Philippines in 1914-16, he was in Brazil, Honduras, and Cuba, and he came here as a consultant. He was the guy that got me started, he said well, why don't you write a {391} we can work this into a Ph.D. and thesis if you want to, and I'd be happy to work with you on it. I took him out in the forest, he came down on a commercial assignment, he said I have my report on the back of an envelope that I wrote on the plane and I got to stay here two weeks to make it look right so show me some forest. So we went out, he was a professor that I took a lot of courses under before, and we got into the middle of the forest and he said I don't know one species at all here but I can tell you something about these trees. And he told me which ones sprouted, which ones grew fast, which ones grew slow, which ones were tolerant, which weren't, and it was all by their morphology. I know from I've learned since and what I knew then that he was generally right. And he wrote a story about Lucena, which is a so called miracle tree now, in 1914, {412} in the Philippines, he was a business man and he showed how you could make a profit at it. His report is still valid. I put it out to the people in nitrogen fixing, they weren't aware of it, and it tells the story better than they do. Way back he showed how raising this cattle feed and getting the fuel was a profitable business, way back there. Well, he was the only guy at that time that was in management at all in tropical forest. He died before I finished, Dana took over the last year. He was in on my preliminary, it was good and he went after my plan. Tom Gill is a person who I thought more of than a lot of other people. There were people, in fact even Bert Harper, at times were vexed with Gill. He saw him as a kind of fat and sassy kind of guy who was living under the umbrella of a wealthy patron and because he had a flair for writing he started this International Society of Tropical Foresters and went around meeting the famous forestry people and would write something up which was kind of visionary. Yet Tom Gill went to a lot of these meetings, FAO, and he went to a meeting in Caracas of the Latin American Forestry Commission. Gill had good insight, he was smart, he separated the weak from the chaff, and he often could sum up a situation better than anybody else. One of the things that he did was the Lathrop Pack Foundation course for student thesis, write ups. And the British in Oxford, that's still a ritual, every year they have the Lathrop Pack contest for student reporting on zone tropics. And I published some of this stuff, the students were good. I got it one year. He was ahead of his time. His secretary was the wife of a Forest Service employee who'd just retired and she had all his records so that when they started up the international society after a lapse they were able to get the pass and wrote it up as to how it happened. Gill, of course, wrote the book in the 1920's about tropical forest in the Caribbean.

HKS: Where are these records? We have some Gill papers at our headquarters, in from the SAF.

FLW: Well, it was Gordon Fox, the other man is the one I've got to get the name for . . .

HKS: I don't want to distract you, we can pick this up.

FLW: I'll get it though, because I think those papers may belong--and maybe Doolittle might have them or know about how to get them.

HKS: I saw Doolittle in Richmond and he knows that we have the papers, the International Society of Tropical Foresters, and we should be getting some more some day.

FLW: Do you think you have a complete set of the original?

HKS: Well, I have no idea.

FLW: There were . . .

Wadsworth, Tape 4, Side 1, December 1992

FLW: I think Dolittle doesn't have in captivity a full because those guys, Gordon Fox and this other man whose wife was the secretary looked for them, and I think they got a lot of them. I reviewed some of them and made some notes in the ISTF News, but way back. Mostly to introduce members to the history of the thing, how it started before, some of the things Gill said. Gill was very famous for making quotable statements. I think he saw it that way, he tried to make it sound dramatic the way he talked. He had a glamorous picture of himself taken beside a big tree in a forest somewhere in Jamaica in that book of his on the tropical forest of the Caribbean. I think he was not well understood abroad, except among the British. He and Champion were friends. I think he knew {15}, a botanist who was a good forester and some others. He kind of slummed with brass, he was that kind of a person. Who knows that was just good rapport? Those were two men that I wouldn't have named in my thinking about this, but it doesn't mean I don't feel that they had a place. I think the greatest tropical forester that I think I know is was Harry Champion. He came to Puerto Rico here, he was an inspiration to be around. He knew everything. He's gone, but he was in the Indian Forest Service for a very long time and led and wrote a great deal. He was like Gus Pearson in many ways, he was philosophical, and I'm sure a strict disciplinarian. Oh goodness, he came with his wife here, and our womenfolk took his wife around to see town and so forth and she was calling off all the trees along the way, knew them because many of them were Asian. And was quite insistent about why aren't you women doing something about getting more trees, the city here doesn't have any trees, there's a lot of open country, isn't it hot? Just going right on. You could tell they lived a life of drive. She outlasted him, but I think she's gone now I think. He was at Oxford for years.

HKS: So essentially, the English forestry, the colonial tradition, is the leadership in the early years of tropical forestry? Is that a fair assessment?

FLW: I think probably the Dutch in Java did more early than the British. They planted a million hectares of teak in a country that was so damned crowded you don't know where the trees went, and I went a saw some of them. It's a great asset to the country now because teak is used almost by the square inch, it doesn't rot, and its easy to work, people carefully bring every log in, and they've got ways of making all kinds of, the orchid baskets that are made are often made of teak because it doesn't rot. If you have a kind of a log cabin type of structure like this and you put the orchid with some earth or something. They come all the way around the world for this teak. And the early uses for the British are no longer in vogue, as for aircraft carrier decks and things like that, they don't use them anymore. The British I admire most because I know English, I don't know French. The French, when I worked on my book I felt I had to look at the French work to be sure I gave them full credit for what happened and time and again when I got to struggling through it I found it was parroting something the British had done three years earlier, and the British always allege this but the British and French, you know, have a thing going always. But there were some very good French people, this {053} was an excellent ecologist, better I guess than most Britishers. There some good British ecologists, Tansling, {055}, but the British forest record in India is worth looking at. There were silvicultural conferences, once in a cave, and they brought in all the people from the {058} Forest, Burma was a part of India then, and the concerns with the welfare of the resource, the land, the animals, the soil was all apparent in those meetings.

HKS: Can we look at Belize and see the British influence there in the forest.

FLW: Yes, you can. In Belize, Belize was {062}, it was full of mahogany, mahogany was very rich there because it was Myan country. We're told that the Myans disappeared suddenly as a result of drought or something and they left bare land, and teak and mahogany is a pioneer. So those forests are rich still, this long after. With mahogany more than any other in the whole hemisphere. The British found this out and according to the Latinos in a crooked way got control of British Honduras by concession from some individual. And when I first came, one of the first articles I edited was from Stevenson, a conservator of forest in British Honduras, and they had Alan Lamb was there, they had good people. They had the forest state under compartmentation and they were following growth and still have a lot of mahogany. BH, Jamaica and Trinidad were three strong British outposts. On Jamaica they moved towns to preserve forests and mountains. They set up 200,000 acres in the heart of Jamaica, I think most of it is still forest reserve, but they actually moved people out, it was a colony. I guess they gave them land somewhere, that's the kind of thing you wouldn't think of today. Swaybee, the forester there was a tremendously interesting person. He came here, he helped support the Caribbean Forester. The British people communicated among themselves

and they transferred a lot so they knew what was going on elsewhere, they are still that way. The best silviculturist that I knew was a fellow died last year, Aldolkins, he's the one that retired to Oxford, wasn't well and passed away. He was in Uganda where he developed a natural system on a seven year rotation, had the whole country on it before Idi Ahmen came in and kind of wrecked the country. We're down on this item about key figures, generally, there are two or three Dutchmen that ought to be mentioned, and I'll have to go to my manuscript to get them, their names are kind of complex.

HKS: You can add that when you see the transcript.

FLW: Sure. The British people, I think there's at least 10 I would say, are very outstanding. Leslie Vernal, and of course some of the people that went on to FAO in Rome became very prominent because they were good {102}. His writings, which have now been captured by Alph Leslie are classical, really. He was the one who first said that there is a misconception that forestry is about trees, its about people. Everybody's quoted him as it was theirs ever since. Of course, he's an economist and he always complained about the disenfranchised people, they lost the forest because they didn't take care of it, why should they, it was never theirs. He was considered a communist by Harper and our people who were dealing with FAO, and we had a lot of power over FAO and so he was turned down as possible director of the forestry work there because he thought he was pinkle. There are some good Frenchmen. The Belgians, they worked in the Congo but there's one who's in Brazil now, John Dubroise, I think he's the only one I know who is Belgian. There must have been some good people because in the Congo they did some work, but of course the Congo fell apart, I'm not sure how imminent it would be now. And U.S. figures, there was one that Tom Gill thought a lot of who worked in the South America a lot, and I'll find that name because that person was ahead of everybody else as a field person. He was out, he wasn't much prolific as a writer. I was asked just last week to replace, there's a big program going in Paraguay, and a man from Indian Wells, Nevada, Jeff Atkins is running a corporation who believes that by setting aside a big tract of natural forest and taking care of it now he'll be in an OPEC situation in 25 years. I'm on his board and he got a fellow, Auchinson, from Catia, you might have met him if you went there, and he called me last week and said, well, it looks like Auchinson won't be the person, who would I recommend as the second one to go out in the forest and show how to handle it. And it was over the phone. He said he asked a British fellow, he asked Peter Ashton in Arberitum, and they both said, well, we aren't making kind people anymore, we used to have some but there aren't any anymore. They've all passed on. And I said I don't know if they've all passed on, but there just aren't any that I can think. Then I suddenly thought of one that I'd been with two weeks earlier, a German who is in Mexico and could do it, and I gave him a reference. It's that rare. There are today people who can take a young group and go out in the forest and show them the trees rather than the forest and have them with a day know how to take care of the forest silviculturally. There are not people like that because almost all foresters are captivated by the productivity of plantations. They see it as the only future. Its 20 fold over the natural forest, but the natural forest is always kicked when its down. Its been gutted, its got about three corn plants per acre, that's what you're comparing. Other trees you can't harvest them, so you blame the forest for what three poor trees can't do alone. And if you enrich it over time it comes up nicely and the product is worth many fold more than that of plantations, except for teak. We don't have many people today that know how to teach natural forest silviculture, and its a tragedy. I'm very optimistic about it, it's the future. We cannot afford to plant fast enough to satisfy our needs for the future. Sure, Leslie's right, if you had one-tenth of the forest in plantations you wouldn't needed the other nine-tenths, you could give it to the ecologists, or the greenies, as he puts it. That may be right, but the world bank can't afford to plant one-tenth. They wanted eight billion by the end of the century. They are not going to get it. Plantations have to compete with agriculture, because they have to be excessive over land, and its high risk. Our failure is here, what's going to happen elsewhere? We are going to have to strengthen that.

HKS: A way of getting into this Washington office priorities, it may be only because of the chronology of the story you've told so far, but you've only mentioned Harper and Buckman, but not Arnold and Dickerman as people you reported to. Is that significant, or just an accident so far?

FLW: I distinguished between Arnold and Dickerman quite sharply. Dickerman, his past was in the northern part of the United States. I would never have thought of him as a person with a soft spot for tropical forestry, and he had it. He was a very broad person, and he's still going, as you probably know. He must be 80 something. When I called him on the phone he was the most friendly voice I could get from Washington,

frequently. He didn't pretend to know, but he felt something ought to be done. When PL-40, Public Law 480-481, we were giving away military stuff, using the money we got in their currency to support forest and other things. He had quite a program going with sending Bert Lexen around to Indian places to run forestry projects in the tropics. And many of them were ill-fated because they really didn't have enough information. And some of the countries took advantage of this. Dickerman, I think, behind the scenes I don't think there's any monument I could build to him for one specific thing, except he was {198} catalyst, he had more vision about it being a problem, and he sensed that he had a somewhat of a responsibility toward, which of course nobody did. We always thought of it, let them stew in their own juice, you know. Keith Arnold, who was a classmate of mine in Michigan where we got to know each other quite well, I don't recognize as being a significant figure in tropical forestry. He was in that job for quite a while and certainly didn't stop us. I think we held our own, but I don't think of many initiatives that go back to him. I may have forgotten something. He wasn't unfriendly, but as I say, I just sort of consider him as a kind of neutral person with regard to this. We had very few people in the whole Forest Service who somehow had been in the tropics, the Peace Corp didn't exist. A few went over to Rome and worked in FAO, Bob Winters was one of them, you know Bob I'm sure. I have a lot of respect for him. He is a person who has tried to rake together a lot of the story, I don't know how far he's gotten or how well he is. I'm afraid he hasn't finished what he started, I just don't know. The guys went over to Rome, some of them were not as deeply involved as they were in American policy. I think they tried to see that we got our money's worth for what we put into FAO. I know Harper himself was always critical in saying, well they do things on the sly when they are around and the first thing you know the money's gone and we haven't got what we wanted and the next time you go in there you don't want to pull out but how do you deal with this? {236} who followed him, and those guys were not US citizens, they weren't people we could spank, and I think those guys that went over there for those times kind of felt like their job was surveillance or troubleshooting or something. They did start a committee on tropical forestry, {241}, Osser didn't want it, he didn't think they needed any advice. We're still meeting, I haven't gone after a long time, but they started it. I think, seen from here, the Washington office view of the tropics was I think virtually nil until the recent furor. We were handled as a county, you might say, in terms of size of program. We did have a little utilization program with two people for awhile. And they themselves worked themselves out of a job. They did all the things that were urgent and they moved on, one went to Yale, one went to Madison, I guess they both went to Madison.

HKS: Well Harper, Jimmison, and Buckman were high profile in IUFRO. Did that given them more interest in what you were doing here because they saw you as part of the international scene?

FLW: Yes. Harper was instrumental, he was the strongest of the figures that you mentioned. Jimmison was pretty good because he got IUFRO over to the U.S., which it wasn't before that. Buckman, of course, moved on to chairmanship of IUFRO, which was a rank the others didn't have. Maybe Jimmison was at one time. But Harper in the Forest Service, when the FAO came up with the commissions on which we were members in this hemisphere, and foreign travel on meetings began to develop well after the war, Harper was interested. I don't know all the motivations, but he was interested, and the rest of the chief staff was not. The result of that was that international forestry was placed under research, where it's been put today. Harper was generous with us, he gave me extra money to travel and wanted Puerto Rico to prosper. He didn't pretend he knew what we should do, but he was willing to stand behind us. If I go in there screaming . . . he bought the Thomas estate in the Virgin Islands as an experimental forest, just out of pocket money, kind of. Their book value is $39 an acre, so it wasn't too bad. He said right over the phone, don't worry, go buy it. It was federal and they would let it go if we didn't want it, so we got it. Harper had an intense interest in these meetings, and we all had formal assignments and we had to meet at 7:00 a.m. every morning with our plans like the U.S. does at all their meetings, and Harper perpetuated, I never saw him laugh at a joke hardly, he was a very serious person. Everybody just kind of trailed into Harper's views on these things, and he was smart. When they appointed him Chairman of the Research Committee in Latin America--the Latin American Commission--a commission on which we agreed we should not serve on any official status as officers because it was Latin America and we were almost observers, the U.S., he was at the table when it was announced as a proposal and he had to respond, and he turned around to me and said "I don't see anything wrong with that, do you?" What was I to say? Well, he accepted, and he served for two years, and he financed the committee, and we got out a report on research all over Latin America. He finance a meeting and go to ever station and find out what their problems and their status was. And those reports came out on two trips. Then we made a hugh volume from plantations. He financed three of us to just take a satchel of

tools and go to plantations, outstanding, all through Central and South America, documenting how well they grew, sites and all that. And we'd always take a counterpart person. I handled southern South America, Bruce Lamb took over Central America.

HKS: Was this published?

FLW: Yes, 1960, I think. It was published as a document of the Commission, so it didn't get very wide, it was a Caribbean Forester extra. It's in the library. People are still citing it some because some of the British had nice data, so we didn't really have to go there, they just sent us the data for the best plantations they had. Most of the plantations weren't mature but we had heights and diameters, the bacillary at certain ages, they sent something on the soils. The idea was to bring some chaos out of our testing 400 species here and finding very few of them were any good. That was the idea. So, Harper helped on that and he got involved in European forestry some, the meetings in Europe. I can't say that it wasn't somewhat that he liked to travel, I mean, that's often underneath a lot of this. Stan {Kruman 342} today is that kind of a person. He got research and he got into the National Forester and he kept putting a person in it. But the office itself was kind of inept, they handled trainees came, printed programs for them, got us our passports and travel information. But it was a kind of a weal link. Meanwhile the chiefs and the Forest Service, and other Forest Service people were joining IUFRO or going off to meetings, they someone at a cocktail party and they'd go to Japan or somewhere unbeknownst to international forestry. It didn't really have the {catbell 356}. And so all these years, because it was buried in research, the National Forest administration didn't look to it for support. If they had a meeting in Finland or somewhere they went. It didn't really accomplish a "nation" or even a universal service function. I felt all this time, in one way happy that it was in research because we were research, but on the other hand that the Forest Service as a whole had an international role that it would never play as long it was under research. And this is why I was the person who began the furor about a deputy chief. I told Buckman, I said it's time we consider having deputy chief of International Forestry. And although Buckman was all interested in international forestry for genuine, he answered me right open in the meeting, he said "well, I'm not sure that time has come yet." And that was the way it laid for awhile while we slipped into the farm bill. That's how it happened. It wasn't the Forest Service initiative in the Washington office since. I think our Washington office doesn't really, or hasn't, reacted to these things which I think are very basic. The forest problems of the rest of the world dwarf ours to an extent that if we did nothing to our forest until the end of the century, but spent in all on international problems, the world would be better off, including the United States. The personnel strengths in other countries, much of which we half trained or half prepared, needs us and their not getting us, and they are not person to person much with those people. We have the greatest forestry organization in the world, par excellence none. With all the bitching about the {awl 399} and everything, there is no doubt about it. We have talent coming out of our ears. As they said in Richmond, white Caucasian oriented. But there it is. It's not all bad just because its that. Why aren't we, as a national organization, thrusting ourselves into this thing in some way? Why is national forest waiting for research to do it? Why are individuals sheepish about asking their supervisors for a foreign assignment or a leave of absence to be away? And why are supervisors resisting it? It's a provincialism that doesn't become us at all, and its the profession that's suffering. I mean forestry is being bitched about in the U.S., but abroad we can't even get a quorum in a lot of countries.

HKS: In the U.S. a forester on the west coast does not want to transfer to the south. It's a whole different ball game to learn, for whatever reason.

FLW: I don't blanch at that too much. To try to get a research organization in the Forest Service to tap a good nurseryman, in the Mississippi National Forest, or a person that knows about pulp and paper from the lab in Madison, to supplement a group that is going to Pakistan or somewhere is gingerly because you have to deal with supervisory and you have to across it at the deputy chief level, "will this be alright." I'm sure that's the situation today. And Sirmon is trying to buck it, and he or somebody will succeed. It think we ought to have a computer there where you just press a button and the lights green all the way to the person. And you pay the bill. That's one of the things that has got to change, Washington's got to pay the bill on this. We've got to send somebody to Africa for two weeks or whatever it is, why should the National Forest pay it? Recently the chief said, "anything up to two weeks is paid for out of our glove." That goes against all of our operations because everybody is under attainments, month by month. And this comes out of the blue and falls on top. If you don't make your attainments they don't ask questions, I mean its a tough battle. We had a

Secretary of Agriculture years ago, you may remember him, Freeman. A Minnesota guy. He made a statement as Secretary in which he said "I hope that policies that I can put into effect will lead to 25 percent of our employees having some foreign activity." Well it sounds extreme, but the guy was sold, and he was from Minnesota, I don't know why. I think you ought to know when you come in you might get an assignment, if you have a special talent you might get a lot of them.

HKS: Do you know Bob Spivey?

FLW: I know a lot about him, yes.

HKS: Well, he worked in Honduras.

FLW: Yes, I was there.

HKS: I was talking to him about this time last year and he was saying there was over 2,000 employees in the Forest Service who are Peace Corps returnees and have language skills. He was saying there is a lot of people, a lot of talent in the agency, all in the National Forest Administration.

FLW: I haven't heard the figure of 2,000, but I don't doubt it and I've bitched about this a lot. I've complained about our roster, we sent out questionnaires, is totally incomplete and doesn't have some of this information on it. Because people who are kind of squeamish about submitting because if their supervisor hears they are pitching for a job somewhere else it changes the whole ball game, you know, for them. Spivey is . . .

Tape 4, Side 2

FLW: I think the Washington office is very slow to get away from what's under our noses. I sense when we're abroad and I have people from the Washington office, that their being a fish out of water is transparent.

HKS: Do you think that might be because they are afraid to go to Congress and the Budget Committee and testify why we need money for overseas, and the congressmen say well we've got four people in Appalachia? Do they become "pragmatic" at that level?

FLW: Maybe some of them, but now we have a line item for the first time, and we haven't had. And when Jim Bradley said that when they gave us the first money from {Pinto 10}, they didn't want to give it to research so they gave it to state and private, it was the only other hook they could put it on. Its caused {trastona 12} inside the agency because of turf battles now between international forestry and state and private. But now that international forestry has got the money, Dave Harcharik tells me that he thinks the Congress will make a single appropriation to international forestry. I don't the Forest Service has been, certainly not now they are not hesitant because they think Congress has awakened to this. But apparently Congress today is hearing from people what you're saying. That the President took care of the rest of the world, went to spend all of our money over there in the Middle East, and we haven't got good schools, and all kinds of things like this, the highway situation. There is a backlash, I suspect most of it's in the Midwest, against blowing it abroad. And I think the grandiose plans of the TFABs will flounder for awhile, at least they won't get full support, merely because of the fact that we've got what I think will be a temporary public reaction against this balance, as its seen by conservative people. Obviously local things have to take some preference. But I think that the Washington office, they send me stuff for ISTF News about New Zealand and Chile, neither of which are tropical. That tells me a lot. It's those guys south of the Rio Grande, you know.

HKS: You mentioned this. Tropical forestry in the High Andes is not, is tropical forestry whatever happens between the tropics of Capricorn and Cancer?

FLW: I think so, and some outside, because the Bahamas for example, or tropical Florida, and down around Rio it goes a little farther too, Mangrove. Mangrove goes all the way up the west coast of Mexico, practically. There are some places in Africa and also in India where it transcends the tropic climes slightly. But there's plenty to do between the lines, so it really doesn't have to fight about fringes.

HKS: So conifer forestry would be typical of a lot of tropical forestry?

FLW: Abies is in Costa Rica, and that's part of our bag. The climate is uniform, you see, even though its cool. And so you have the complexity of the diversity of the vegetation is still there. The oaks that go down into Mexico and Central America are mixed with pines, and a lot of other species that aren't in the temperate zone. Chile's north is desert, only where it gets near the tropics is desert, just plain, no rain at all. Argentina has one area in Misione, which is tropical. India is about half temperate and about half tropical. Mexico is too, really, I think. Anyway, coming back to it. I think a great many people arise to our organization because they weren't the kind that went into the Peace Corps. They are the kind that can handle four phones, a dispatcher, you know, an engineer that goes out and rips the road through and meets the schedules and stuff. And they go up the career ladder, and the people at the top are demanding people, people who can take pressure and people who are looking forward, not too much to the side to get there. I'm not sure that's wrong, but I don't look to them except when you have an exception something like Harper, or Jamison, or Buckman, that got pretty high up, that had this broader vision. And sometimes it comes from a happenstance where you were at an affair where you met a very charming Brazilian and got to talking, and the guy said well, I'll show you a million acres of {markellia 65} pine that needs management. Would you like to come see it? A guy talks to his wife at home and the first thing you know, well maybe its personal, I don't know. But somebody gets interested, and then he realizes, well the whole world's this way. And the forest of the tropics are six times the area of ours, just the tropics. And these more or less basic things I point out, we are guilty by {allition 71}, it seems to me, in this area of not stepping in. Why do we train people academically and then cut them loose and send them home and they become the head of the forest department, where in our country you go through a long career before you ever got there. Men we would consider totally green behind the ears, you know at that stage, they are the only forester in the country, or one of few, or the only one that has that plaque on wall, and we do them harm. I had a Brazilian tell me, if you to train our people, you send the trainer here, don't take them away. I've got two Ph.D.s around and I'll show what they're doing, and you'll see what I mean. One of them was convinced, he went to Oregon State and came back convinced that the tear drop was not a perfect figure for aerodynamics. He had made a wind tunnel, shining with balsa wood all kinds of sizes and shapes, to see how he could produce the resistance below that of the tear drop. And the other guy studied at Yale, I guess. And he came back convinced that our techniques for specific gravity are biased because we take a cross with a log and samples all along it. And he says, well there's more near the edge than there is in the middle. He's trying to change the world's basic { in San Palo ?? 90}.

HKS: Pretty esoteric stuff.

FLW: Yes, they are worthless to me, even if they publish I can't use it. Well, that's another question. I feel very strongly that there is a long way to go still near the top of our outfit in letting Sirman having really an equal place at the table. When he comes along and says, listen we've got an emergency, there are a bunch of fires in Brazil and they want us to help. The National Forest says we'll send a crew down there tomorrow, I'll get them down there. Without questioning the priorities, because Sirman may be wrong, he may do it too often. He is spending this time building turf and its slow. I think he's got good judgment, and I hope he doesn't have troubles internally. There's some reason Harcharik might have expected to get that job, I don't think he was ready for it quite in terms of grade, yet from all I know and I know Dave well, I like him, I think he's harmonious with Sirman. They started off with some differences, I think, but I think it's come around. But I've heard some bad things about Dave's administrative capabilities in terms of people knocked away, I think.

HKS: I've heard people observe that roughly half of the international forestry staff, until now at least, have been AID people and really have no allegiance to the Forest Service. Their perception of what their role is, they are working for AID, not the Forest Service. But they happen to be sitting in that building. Is that a good observation?

FLW: There's a forestry support group where we went to AID and said you have a increasing job of bringing forestry talent to the rest of the world for your projects and you come to us and bother us to try to find names of people and we need to know more about all this and we suggest that you support the group, that's

allegiant to you, but tied to us in the sense that they get our roster, they have the chance to tap forestry talent all over the country. And that's what's happening, it's Van Deily and Carlos Deliagos, and some other people, I don't know them all. And they are AID oriented, AID paid. And AID is financing some other people, for instance Bruce Vail who is here, is financed by AID. He goes around looking at their projects, suggesting one, and writing some proposals and often troubleshooting for them. Something we don't necessarily care about, but they've got a problem somewhere and they want to find out what it is for the { pros ?? 129 }. And so he's torn between strictly technical and administrative work. I don't know how to disserve the relationship with AID constructively. It may be that we're lucky to get what we get out of them when we need it. I mean those people that are helping there may do more good to AID than they do harm to us.

HKS: I don't know how much you want to say about the Forest Products Lab, but obviously they've had some impact on the study of woods. Have you been involved in that over the years?

FLW: Yes. We have always thought of the Forest Products Lab as our backup in utilization, and this has involved a number of things. At least two directors of the lab have visited here. We have put in some studies for them on termite treatments and graveyards for testing treatments. They are doing a lot of accelerated treatment in Madison now where in the laboratory they can accelerate decay in ways and show quickly what works and what doesn't. And we had this project I mentioned, the project that dealt with machine properties, drying properties, and preservation, all with very close guidance of the specialist at the lab. And we had Bart Chuddenoff down here, who as I said went to the lab afterward, and Sidney Boone who is still there, working on woods here. When we have identification problems today I send them to the lab. Like if somebody brings in a wood from some artifact and they want to know what the wood is we don't pretend we have the talent here we just send it up to them and they've got, Miller I guess his name is that's good at, who gives us a response. We have John White here now from the laboratory who is concerned with mostly, he's a broad person, but he's concerned with the deterioration of wood and a physiologist or microbiologist with him, and they are permanently stationed here. Mendel has had me up there making a presentation to the laboratory staff in which their foreign students cornered me in the afternoon, we went all afternoon discussing back and forth problems that were tropical. They have a long history, of course, of involvement in the Philippines. The former head of the lab, Mark Ward or somebody, went to the Philippines and started a lab there which has many similarities to ours, still going and strong. They had some deterioration of pulp wood I think in piles waiting for processing and a couple of people from the lab went down and made some elaborate studies to correct the problem, I don't know how far they got. Gary talks as though he feels that he's on the fringe. He's been assigned a responsibility with ITTO in Japan which means, you know he had a meeting with several other people and brought the head of ITTO to Richmond, and Gary I think is a good man. He has served on a number of their committees, which are struggling with criteria of sustainability that could be applied to countries to find out if they qualify for tropical timber, and stuff. I don't think I'm aware of lab relationships with industry in the tropics. And I would assume that would have some real potential. For instance in Darango, Mexico there's a hugh integrative industry consuming mostly pine, making everything from laminated arches to charcoal briquettes. One would think that they in the lab would be on a hotline of some kind, back and forth on technology and problems. I don't that they aren't. This is a blank area in my knowledge. I've been impressed when I've been in the lab with what looks like a scientifically sound operation. I think it may have some of the conservatism that characterizes the federal government, and maybe isn't always on the spearhead. I would look to industry for more breakthroughs than what I have. Mainly because I think the industry in a confidential way when it gets a spark is apt to go farther and faster than the lab. You know the lab was curtailed on process of wood modification that changed the molecule some way so it wasn't biodegradable, and the story is that the guy who discovered it was almost fired because he published a research note before it was cleared and the industry buried the thing. I don't know how much is alleged or how much is true but I heard from close to the source and if its true it sounds like they have a perfect preservative, but it does in all the existing infrastructure.

HKS: When a McMillan Bloedel goes into southern Brazil, or Simpson goes into Chile, or Warehouser goes into Borneo, who do they turn to for advice?

FLW: I know about West Virginia Pulp and Paper that's in southern Brazil, I guess, there's another one there--Olan Kraft. They are using {loblolly 221} pine, so they don't have to go to anybody really. They are getting a third more growth. When Warehouser went to Borneo, and they are out of it now, they were in

{Calamantan 224} and they got out of it for social reasons or political reasons, they had a fellow by the name of Johnson who was very active, he's still on their payroll.

HKS: Norm Johnson?

FLW: Yes, Norm Johnson. And Norm, I'm sure largely by the seat of his pants, got a hold of technology from what he could. I don't know how much he got from Indonesia, but he wrote some things in the journal and it was obvious that man learned a lot. They tried planting a lot of the spectacular fast growing things in their clearings and some of it was impressive, some of it was not. I'm sure they made a lot of bungling errors because the top brass wanted something tomorrow. I mean I'm very familiar with Jarvi, what happened there. It was worth books writing about Jarvi. I don't think that Warehouser's going there was necessarily an FPL tie, because they were harvesting diopter carts that everybody else was harvesting. It wasn't that {chris wasn't doing } there just wasn't more company. Why didn't the Indonesians do it themselves? They were not broadening the base of utilization, finding new uses. This may have been a dream they had. I think the main accomplishment they made was to establish a well constructed colony in their operations.

HKS: So in your observation, I think this is what you've been saying, is that the industry does not turn to international forestry, traditionally, for advice if they are thinking about opening a branch in some tropical forest?

FLW: No, I think it's all been done quite the opposite, where maybe two minds came together fortuitously and produced something and said well, I know the President I can get this through, and start something. Well this fellow who is working in Paraguay, he has no contacts in Madison that I'm aware of and yet he's got 27,000 hectares there, and he's planning to start that on a sustainable basis and believes that having a good silviculturist is all he needs. And he can harvest those woods, process them well enough so that they will sell. Well, that was the way Jarvi felt, and they had three saw mills tied up sitting there that they are not using because all those woods couldn't get used. Of course in Brazil it was worse because they didn't have any people. In Paraguay they have a possible market. No I don't think the lab is, even in the pulp and paper industry in the U.S. has it's Appleton and Chillicothe in labs where I think its new items are just as apt to come as ever from the lab. The lab has, I think, another role to play and that is to search out things that take longer or less early prospects of returns so that the government can afford to do it but no one industry, or even a group of people. Consider it as a high priority or some new trick. The lab has a couple of paper processes which they developed which are now in use. But it took time to get them in. It meant retrofacing equipment and stuff.

HKS: Would it be safe to say, and you may not have any direct observation, that a company goes into an exotic area. They look at market and labor and politics more than silviculture. When the board of directors is making this decision to invest $20 million or $100 million or whatever it is.

FLW: Well, this outfit from Nevada, they dropped Costa Rica because of politics. They were about to go there. They went to Paraguay. There is always a chance because politics can change with the wind. You never know what its going to be. But they felt Paraguay was stable enough, so they went there. Before he bought the land he talked to us a lot about silviculture and he got a Paraguayan who was a forester, a good guy, who looked over the stand and walked through to be sure that there was a good nucleus of species, because there are a lot of species there that are not useful, so that they could operate. He took his word. A man being from Nevada, it must have been somewhat blind faith. But he went down there himself and located this person, I knew the person he got, he was I think an honest person--he was a forester, he should know. I think the obstacles to tropical forestry have always been set in part because there are so many trees we can't use. I think its still a case. I think the ecologist still battle it with us over it. But the minute we start using them all we lay the land more bare and I'm not sure that's going to be very welcome either. It doesn't prove though that we should let them waste on the ground. And with the demands that populations are putting on wood, are going to put when oil becomes too expensive, it seems to me that the lab must have a larger potential than ever in searching out how a forest that has two good species can have seven instead. That's enough a change to me to make the difference between plus and minus, almost. And if those seven regenerate the next crop will be progressively richer. I don't think the lab is . . . Bob Youngs was the director of the lab for years, and Bob traveled, he was in Brazil some. He' still doing some international work. I think

you may have seen this picture. But I'm not sure that our selection of lab directors has anything to do with this, and I'm not sure that beyond Gary Mendell, I think Gary Mendell was offered something like half a million dollars of project money when he started and there was a misunderstanding of some kind, that's what I'm told. I don't think he ever got it, and I think he has a secretary and I don't think he's even full-time, I don't know. But this was a foot in the door. And the lab to have something like international forestry in Madison, in Washington, and to have somebody there who would orchestrate the entire gambit of the lab's proficiency and to put it out. I think its needed. A person whose survival depends on how much he produces in terms of getting involvement abroad, and I think the lab is underworked, is my view. I mean I don't think the people are lazy or anything, but why be so far ahead in our problems in the U.S. It would be much better to even drop them and work on somebody else's for awhile. You know their kind of work can be centralized. It's very different from silviculture, its site specific.

HKS: Why don't we call it quits for the day, its a good place to stop.
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HKS: The startup pains for UN based agencies, like FAO.

FLW: Yes. FAO was to us, of course, the most prominent one. Not only here but in the Forest Service. Several important members of the Forest Service and forest begins like Hardy Shirley participated very actively in the early stages of the forestry session. Hague went to Rome and stayed there for two or three years doing organizational work. The U.S. people did not, I think, want to run it, at least outwardly didn't. They were resentful somewhat of Marcel L'lou who was the first director of the forest program. They felt that he loaded the place with Frenchmen, and yet we didn't have many people who wanted to move to Rome and work with him and it turned out that it remained strongly French for certainly five years. During that period it became what I thought was the best of the FAO agencies. In terms of productivity it produced a number of good documents, one of tropical silviculture, it sponsored meetings, it began the forestry commissions. Whether it was originally United Nation's or FAO's idea or whether the countries who participated I'm not sure. But there was an Asia Pacific commission, there was an African commission, European commission, North American, and Latin American forestry commissions made up of not FAO people but of representatives from those countries who were to come together on at least a biannual basis and look at FAO's program, comment on it, make suggestions, and as it turned out, in Latin America expose to each other current forestry. The first one in this hemisphere was the Latin American which was held at Terra Sopolis in Brazil, and Arthur Upton who was the head of tropical forestry unit at that time. I think that must have been about in 1952, or somewhere in there. The second one, I've forgotten where it was held--maybe in Washington. From the third on, which was in Lima, I attended all of them through to the 12th. And the 12th one was in Cuba and I wasn't allowed to go in, but I sent a paper. We were very active in these, sending Harper almost always and two or three specialists, often research people would go and present somewhat of a paper on some subject, or lead a committee. Ken Miller was active at one time and we had people from the Forest Product Laboratory, Bob Youngs. The commissions, I think, have largely folded. The North American commission is running, I don't think it's very active, but its running. The Latin American one almost died and almost committed suicide by its own choice about three meetings back, but has come back to life. Ariel Lugo was here, and presides over the research committee now, it is a subcommittee which presents a special report on research at each of the meetings. Our alternate is Hal West, who is the estate and private forestry assistant chief, and of course he's attended. The meetings are generally not in the U.S., they are in Latin America. The North American commission has been stronger because U.S. and Canada kind of dominated it, with Mexico an add on, kind of. And it's met in Canada, the U.S., and Mexico. Curiously, it has a number of study groups which perform between the meetings of the commission, which is a reporting meeting. And one of these in which I have been involved since 1978 when it started was a silviculture study group, and we were asked by the commission to limit ourselves to the tropics because their fear, and ours too, was that if silviculture were Canada, the U.S., and Mexico the tropical part would disappear in the woodwork and all the work would be between Canadians and U.S. people and English. So we have had meetings every two years, the U.S. has had five members on it for quite awhile, one from Hawaii. We've met in Hawaii, we've met in Victoria, we've met in southern Mexico three times, we've met

here twice. We've had people like Frank Bonner on seeds, Russ Burns on publications on Timber Management Office in Washington, and right now the secretary, who is Bruce Bail of right here in Puerto Rico. The next meeting, its not clear where it's going to be. They've been here and in southern Mexico so often that they may not go there. One of the activities was a directory of tropical silviculturist in North America. Another one is the {Silvit's 78} Manual on Trees for Tropical North America, which is still in it's pre stages, we have about 12 species done. We have sponsored training courses in southern Mexico in tropical forestry, silviculture management. The last one was on economic environmental impacts of silviculture. We're considering another one about two years hence. To these, all the Mexican tropical foresters come and usually there are invitations into Honduras, we brought some this time from Costa Rica. It's sponsored partly by AID and we've been active in it all the way through. Where there's a problem with translation, and people here and in Puerto Rico have been key to that, we go back in the language in our meetings and our communication between meetings. It's an active area. I think its the most active subgroup right now of that commission. The Latin American Forestry Commission, language because nobody could afford to go to the meetings. These meetings are often held in a rather large city, they been to Santa Ago twice, and Buenos Aires, in San Palo, and Veroquez, and Mexico City. They attract the wrong people from these countries. Forestry people are thought of as below that level. It's very seldom do we get anybody who can talk about trees. Often it's only a diplomatic representative from the country in which the thing is held, who knows nothing about trees. The best of them listen, others go and shack up or something during the time, we never see them. It's been very difficult, for example, for the research committee to keep the subject on the road. We used to have a separate half day for each of these subcommittees, there's one on utilization and one on teaching. And we would break up into subgroups, but there's never been enough protoplasm in these meetings with subject matter capabilities to make those meetings anything more than just an acquaintance session. We used to go much deeper into it.

HKS: Can you generalize? Were the start-up problems one of nationalism, poverty, lack of technical expertise, or is it all of those things?

FLW: I think one of the things was FAO wanted to wave its wand over the world, and didn't really want to be told too much, but was rather telling that this is what we're going to do, and it have an endorsement which would give them strength. I think this was detected by many of the countries that have tried. From the very outset there was a certain amount of interfacing, critical interfacing, between what the countries thought and what . . . FAO always opens these meetings with the secretariat papers, which they prepare in advance, many of them very good, they outline the subjects, they presume they set the stage for our discussions. But they often present a kind of fait accompli aspect, saying well, we started this and we're going to go on with it. So they weren't asking for critical comment.

HKS: Were these agencies interested in third world, I mean I think of IUFRO, being around 100 years but only now has had Spanish as it's official language.

FLW: I think that its fair to say that United Nations and FAO, World Health Organization, all these outfits have always had a strong tropical flavor to them. It was many years after FAO was started, though, that they got the committee on tropical forest. And they themselves questioned it at the outset whether there was a purpose for it. At the first meeting, I think, Lopez justified their concern, because people came and put on their helmets and shorts and talked about the tropics. It didn't tell FAO "do this, not that" very much. And Osara, who was then the director, at a cocktail admitted plainly that he wasn't sure how much he was getting from this committee. He's the former director of FAO. So FAO is the one I know most. FAO's headquarters has always been a formidable place for most of us when you think about working. It's full of intrigue. The small countries put in 25 cents and demand they have a position in the staff somewhere, and the person they send is the President's nephew. And all that kind of things happens. And right in within there's intrigue among the employees fighting for promotions. Its seems far worse than anything we have in Washington. People I know that have gone there, like the ones that worked in the publication of the {silvi ?nuthers? 155} have almost always been peripheral to the main stream of activity.

HKS: What's your appraisal of Unasylva as a forestry magazine in terms of its quality?

FLW: Historically it was good, and I think it isn't as good as it used to be. But it has very timely articles written by good people. I think people like to put things in it. It's published in two languages, or three, I guess its in French, too. I think its a real service. They were about to drop it, as you know, and we were all concerned about it as well felt that worldwide it was doing a lot of service. There's nothing else like it and it has good illustrations. I have not published in it, but I it isn't because I didn't want to, I just didn't see I had any special thing that looked like it belonged there. It's a very bit audience they have, and I think you have to write very generally. I think part of the image of FAO that environmentalists have is that it's timber oriented. More recently there have been a lot of articles on agroforestry, which is a change because agroforestry isn't supposed to be in it. I still thing FAO, compared to some other agencies in the United Nations. Interestingly, Freezialah in Richmond, the comments he made suggest that he wasn't going to dismantle FAO at all, he thought that was the ride. He's the director of ITTO, International Tropical Timber Organization, and the one that Gary brought. UNESCO I know less about except that UNESCO, I'm not sure it began as early as FAO--it was about the same time. And of course it has a broader scope, it's scientific and educational. It has been more environmental, its done the MAB, Man the Biosphere Program, Biosphere Reserves. And its people who I've known have been non-foresters or at least they are redeemed foresters that became strongly environmental. There has been rivalry between UNESCO and FAO but there's a great deal of joint work as well, many are publications. They had both their names on them. I certainly believe in the Biosphere Reserve principal, I think its been misused somewhat, but that's something else. So, UNESCO came up, it overlapped FAO some, but I think FAO was truly timber oriented so that UNESCO has a niche it was entitled to it seemed like.

HKS: The U.S. dropped its support of UNESCO twenty years ago. Assuming that the allegations that were made were precise, did you see it at the scientific level? dominated by communist or some serious allegations.

FLW: No, that didn't show through to me. It sounded almost spiteful the way it was being done, and I don't know that it was untrue. You remember FAO and those outfits, United Nations was in New York, and a lot of those things went to Rome. There was talk around that they were going to Rome where they would be out from under our surveillance, they could do as they please. That was one of the cracks made at that time, and I think there was some truth in it. I'm not sure our surveillance should have been, you know we aren't the world, but I think we thought we were.

HKS: Well, we paid a quarter of the dues I suppose we felt that justified.

FLW: Yes, that's right. And we're farther behind than the Russians ever were, now. Actually, I think that the organization has been studiously non U.S. at times on certain issues. I think we probably are cowed somewhat by the financial implications of being just revelous. So I think probably its been cushioned a little bit by the obvious threat that we could continue. When we slowed up in payments they had to let people go and all kinds of things. It went right to the heart. We had leverage, whether its proper or not I don't know. Where we have Ralph Roberts now saying through IUCA let's start up and get a new world organization because FAO can't control forestry, its doing a poor job on TFAP. Well, he's coming from an environmental pace. But he's a good man, he's a Canada. I think that's wrong. Hollis Murray, the head of the FAO program responded, showing how a new agencies would have all of the limitations and all the responsibilities that FAO has. And the thing to do is if it has to be improved is to improve it, not to start something new and wipe it out. Of course that's a bureaucrats response, but I bought it. I think its logical. FAO has been highhanded in TFAP. The tropical forest action plan is not as bad as the greenies have said it was in the sense that it was all signed by those governments whether they like it or not. What FAO did was to pour some expatriates in there to right the thing with the people. I know of one that I was on in Mexico, it was somewhat high handed. Mexico prepared a draft that never got there that I liked. The guy who did it was practically thrown out because of the changes that he couldn't buy. They got a plan, I think through the Mexican government and the election came and they threw aside--I don't know where they are now.

HKS: This has always been our problem.

FLW: FAO has always, and the U.S., has assumed that those guys in grass skirts just aren't planners, they don't know what they need, we'll help and we'll show them. Well, the whole thing was to get grass roots

requests that could be raked into a pile and { you throw some books at it 260 } and you take this one and I'll take that one, Howin or whoever wants to do it. For the first time the donors would be coordinated, that was the hope. And line coordination donors are the worse demonstration of the rich helping the poor there could be because we have all the power to coordinate if we wanted to, and we don't like each other enough. I had this number two person in AID tell me, they had a big review from Norman Borlaug and a bunch of us, we went right into them and we said "why didn't you spend more of our money on multilateral aid rather than bilateral." And he said well, Zumi talked to him about the United Nations and FAO, well we can't work with them we tried it. That put that sucker to rest. Well, I haven't forgotten that. That's ill. I don't that somebody had some trouble with them, but that's not the end of it. I mean they are there, we're here. When we do something bilateral its transparent to the country that we want them to buy our tractors to do the work. All those things come back and it looks like industry is running it.

Well, we're off the start up pains. I don't know enough about other agencies you know to worry about it. They aren't U.N. I know about the U.S. ones some.

HKS: Somebody in the foresters asked me to ask that question, so they had something in their mind you responded to it enough I think.

FLW: I think somebody like Bob Woodard has a much better picture. Harper, if he's around.

HKS: Yes, he is around.

FLW: You know he is, do you? I asked in Richmond but couldn't get any information.

HKS: Well, he still sends in his annual dues to the Forest History Society. His signature and his checkbook's firm. I watch signatures on checks.
FLW: That's right. He was really at a lovely place. His wife wasn't too well. He was talking about moving to Franklin where they had that big property, forest property that he was trying to manage. I knew he had dropped out of teaching but he's been absolutely quite. And we were pretty good friends.

HKS: Let's move on. I'm not sure if the timings is logical to you. You made a decision to go back to Michigan for a Ph.D. Why?

FLW: Okay, well, I slopped into that somewhat yesterday. When I got here it was apparent that there was nobody else that knew anything about management of forest. The idea of sustainable cutting and so forth. There had been efforts early to make inventories but they were all very poor, and they were of three or four species of soft timber only. Nothing on regeneration, and even the locations of the stuff and, for some reason, the data wasn't very convincing. I knew that we needed a new management plan. This was about 1945 when I started making those studies of growth. I knew that until we knew how fast the trees were growing we couldn't figure cycle length or anything else. I was doing some of this when professor Matthews came. He was intrigues by it. We had social problems, we had a lot of people living in the forest at the time, we had lots of plantations--some of them good some not, and we had the natural forest, and the man forest. People were taking charcoal out, they were taking out soft timber and poles for growing use. So he said, well, this would make a very interesting project and could get you a Ph.D. Well, until that time I hadn't thought about a Ph.D., really I'd never thought of it.

HKS: Was the Federal Employees Training Act in existence then?

FLW: No. So we talked a little about what would be involved. It wasn't too different from what I planned to do, I had to get the growth. I had to divide the forest into compartments, and I had to make an inventory of what was there, showing the regeneration and all that. We made a deal where I was going to Ann Arbor for the calendar year of 1947, which was two semesters, the spring semester and the fall semester. And the summer period I was coming back here because I was on the inventory. And the inventory was done, started that year and finished in 1948, of 17,000 acres of the 27,000, which was the lower pipes the more accessible stuff. I started gathering together my stuff. When I was in Ann Arbor my committee was formed. Dana was on it. We had an architect (we had a school of Architecture), we had a botanist, and a sociologist.

And Matthews didn't like sociology so the committee wasn't very unified. But I was able to capitalize on that during exams, but in the meantime I got some mixed signals and didn't know exactly what to write. Well, finally I wrote what I called a synoptic outline, which was about 10 pages of outline, with a paragraph under every heading as to the gist of what I would be saying there and got that through the committee. And then I felt I was on safe ground to go ahead and write and I started putting this stuff together. And by 1949 I was ready to go up there and defend it. So I went up there a month ahead of time, had a secretary type it on this erasable paper so that if exams required me to change--you know you have to get it bound before the exam. In the 1947 period two of the requirements were languages. At that time I had to pass German and they allowed me Spanish instead of French. It was supposed to be one romance and one germanic. And I spent almost a semester or more on the German, it was the blackest page in my history I think. For the exam you were to submit books to the professor, totalling more than 700 pages from which he was to select the passage, something like 500 words if you were to translate the noun, at the time you take the exam. So I submitted, I found Shank's description the forests of North America in wide print and a lot of illustrations and I found another one, I've forgotten what it was now. And during that semester, using a tutor, I went through every other page. And I completed every other page, all even pages on one all the odd in the other one. And the exam came up and he picked something out of the forward of what I hadn't looked at and had a historic subject about the German background for Shank or somebody, and I did what I could. You know the nouns in German are all capitalized, there was a word I couldn't--I didn't know, it was an open book, but I couldn't find it in anything. And I shuddered about this and ran right to my tutor afterwards and the tutor said well, that's a town in Germany somewhere. So when I had the exam he gave me the bluebook and he took the book, which was the wrong thing for him to do. We got down to that word and I said that was one I really had trouble with, I couldn't find it. And he said, well that's where I was born. And he started in and gave me a whole story on that and I got through. Well, when I finished the compartments here and the inventory, I developed a sand tables for every five plots and worked out the cutting rates for all of them, for the major species, the amount of fire wood, the amount of poles, and all that for a period of a fifteen year cycle. In each block I had compartments going around that was an { adequate 420} part of it the cycle. And I submitted it up there. There was a lot of socially oriented things in it because the people had to walk to work, these were people that were poor that lived in the periphery of the forest, and I worked out the employment and all kinds of this kind of stuff. In 1949 I submitted it I received the degree in 1950. Afterward we published three parts of it in the Caribbean Forester, sections of it were. It got me into land use planning, which I'd not done very deeply before, and that's why I went with the Department of Agriculture here where they really cross off forests in their plans and just start moving around and taking the whole for other things. I finished the thesis there. Oddly when we went on the final exam there were 21 changes in the bound up thing that I had to make. After the exam I had, Shirley Allen was on the committee--she was a recreational professor, and we had to meet in the washroom. And she said Frank I haven't seen much of you since you've been here, why don't you come out to the house tonight to dinner. My family had been in Tucson all this time I hadn't seen them at all. I said well, I'm taking a train tonight to Chicago on my way to pick up a plane for Puerto Rico. She said tonight, well what about these corrections. And I said well, I've taken care of that. At the end the phone I had my typist, I had the binder, and the artist who can communicate type. And they broke out laughing, titles to maps and things, you know, just small things they found. So I got away with that, and didn't go back to the university anymore except for the 50th anniversary, of my 1937 class, I went back and met some our group.

HKS: Did you perceive at that time a significant career advancement element to the Ph.D.? My understanding is that in the 40's and 50's a masters degree was adequate for research.

FLW: I was way ahead of that, I was one of the youngest GS-14s in the Forest Service. It happened as fortuitous, it was not designed for an advancement. But I did know when I took my civil service exam that advanced degrees were desirable. Cause they showed what a masters might earn, you know, was a little more than a bachelors. One of the things I didn't say yesterday was that I took the Junior Forestry Examination three different times. The first time there were no appointments made hardly, it was depression period because I got out in 1937. And the second exam was held before any of us were called, and the assumption was you'd be dropped from the list if you didn't take it again. So I took it a second time. When I left . . .

Wadsworth, Tape 5, Side 2

HKS: Okay, Chicago, south side.

FLW: Yes, I was in the south side of every lumber company loading cars for the Pacific Northwest for Douglas Fir for construction. I'd study nights and if you plot a curve of the grades I got I would have flunked the fourth time. My grades were going down. I was getting farther from school and the questions were changing, of course. Well, so then what did happen was I finally got that {shuntercone 008} job as I said yesterday. I was doing that kind of work when I got out and I had a master's degree when I was doing that, but of course unloading freight cars, actually the shipping the manager for the company for awhile. That was just a few months before I got back to Arizona. While I was at school the GI Bill had come in, and there were master and doctorate students all over campus that had been supported by GI Bill. Professor Matthews had something like 40 master students all at once, and he told me--it was ingenious what he did. He gave his management class a problem, he had two or three problems--he'd come back from Abitibi one weekend where he'd gone up and looked at some pulp timber and he brought some figures and the one of the typical things was this group, in groups of two, was to tell him whether to buy these two sections or not and what to pay for them. And he had an inventory, and he had a whole lot of prices for making pulp, the input that a business person would need to decide who can afford to pay this much, because there's that much there and getting it out. He said it was the only way because he said he started on them on an individual projects, not did he run out of subjects himself, they didn't have many ideas, they just want help. But their results were horrible. Poorly written and all the rest. He said, I'm going to be in my office you can come in any time you want, I want your final report, I'm the manager of the company and I want it to be readable. And he rejected them all the first time . . . because I won't read more than two pages and if you say black is white I'll read the rest of it, but if you say black is black and I believe you you've won. Well, he was teaching them how to be business people you know. Well, that was one way he handled that problem. And I was on the doctor's side, but he knew I had my own projects so I was working away on it. I never had any trouble from him at all. I had a little bit of trouble from the sociologist, wondering Puerto Rico being poor, are you sure that you shouldn't do more for the people, and this complex forest situation, you know. And Matthews said heck no, let's see if we can make money from the government with this one. They got to arguing among themselves. Some of the time went that way, it was useful to me. The degree did not bring me automatically a higher grade, the Forest Service doesn't work that way as you probably know. You may qualify for a higher job but in the job you're in unless its requirements change you don't get a higher salary. The fact you've got a degree doesn't mean anything. It can mean you'd be eligible for a higher salary is one came along.

HKS: It was a financial decision you made too, this must have . . . you took leave of absence for two years.

FLW: It cost me $7,000, yes. I had to send my family to Tucson. There was no housing on campus because of the GI Bill, even though Ann Arbor was all full.

HKS: Your wife's family was still living then? She lived with them?

FLW: That's right, she lived in Tucson. We had the boy then, we had one son. We went back on the boat. We split in New Orleans, she took the Southern Pacific and I took IC to Chicago. I went to Ann Arbor and I lived in a kind of a barracks they had there. And that was where I met Keith Arnold, we were together in there. And we used to go out every coffee break and a different person had to say why he was doing what he was doing. We had a big group of Ph.D.s, it was interesting. And when you sum it all up it was just like Mt. Everest, it was there and you had to get it. And these guys had decided they wanted it, and wanted it bad enough to go through it. And most of the weren't married and didn't have some of the problems I had. I have repeatedly said that if my wife had more spirited woman she would have left me, because a child crying and I'd get up at two in the morning, I did a lot of my work before 6 o'clock, and I was exhausted when I'd get home at night. And it was a continuous cloud over me because it took longer than I thought and I just wondered if I would finish. And I wasn't a good husband during that time. She was born and brought up in the Forest Service, her father was so fully dedicated to it, she understood that and she took it, and of course I made it. A lot of people I think, it can lead to the divorce courts because it's a split. I did have one flair up in my family that showed how this could happen. I got involved in the Boy Scouts because I found out that the Boy Scouts here had no really good outdoor program, they didn't know the trees, they just had a bunch of city people leading them around. They had a good camp, and so I got deeply involved and became

President of the Council, I led about five different units and all that kind of thing. Well, I got so deeply involved that one weekend I got a call on Friday by one of the officials saying they were having a camporee over the weekend and they needed me to judge some of the contests and wondered if I could make it. And I said yes, and so I told my wife I'd be away and I'd get back Saturday night late. And she said come when you want, we won't be here. And she let go, she said I married you as a forester, I expect you to be a forester, my father was a forester, it took his whole life, I expect to take your life. But you've got something else that's coming in between us now and you've got to make your decision. You can either be a scouter or a be a forester, you can't be both. Well, I never got to that meeting. Nothing happened for six months later. But the rumor got around that I'd been shut off and they finally came back to me and came and came through her and got me to a meeting and so forth, and I got back in the scouting but I learned a lesson.

Anyway, going back to the Ph.D., it was a rare case in my knowledge of a person doing for his Ph.D. something that was pretty much right on for what he did later. We have all over the world Ph.D.s in something very different, posing as experts in something which they didn't study or which they may know how to write and all that, but a Ph.D. in Geology doesn't know anything about birds. But the fact that he puts Ph.D. on his card, the inferences tell me how it. I abhor that. In this particular case I've been saddled with managing that forest ever since. It's been my judgments that have done what's been done silviculturally in the forest and in the State forest as well, merely because of that background. Well, the Forest Service married the Ph.D. principal probably about the time I was doing it, I suppose. And its become deeper. I mean Lou doesn't want to hire people that aren't Ph.D.s, hard on our prestige and stuff. It wasn't that way when I was the director. I rather preferred non Ph.D.s, sight unseen, because they were less apt to be ingrown, they were better team players, they were broader. Most people I found that didn't get a Ph.D. did something very useful during the time they didn't, and it was with other people, and broader, and so forth. We had better luck often with people who weren't Ph.D.s bringing into an exotic environment where a personal judgments are a necessity. I still feel this way, pretty strongly.

HKS: I was going to ask, I'm not sure this is the best way to characterize it, but in terms of science and history too, Ph.D.s today is more rigorous of a generation ago. I got my Ph.D. in 1969 and historians coming out today, I'm not sure how to say it, not more tougher minded, but they are different somehow.

FLW: Well, of course they've changed the requirements. I think almost none of them require language. Which we criticize in ways because we weren't using the language. The theory was you were reading all German literature, as you were saying yesterday, to keep up. Well it wasn't true, and it wasn't germane to what I was doing. It was just a requirement. It's often you hear people say, well, its a lot easier today. Well, I think its a lot more specialized today. I don't know how much easier it is. But you have people who get a Ph.D. by the prowess they gain on a gadget of some kind, an infrared gas analyzer they can go out and tell what full synthesis is on a plant or something, you know. And they become an expert on that, you and I aren't. They write up the results they get which are brand new, and then they get a Ph.D. It has some of the same stigma that I referred to earlier in the sense that the man who is an eagle scout isn't necessarily a good scout master. You know the difference. Both of them are useful people, and both of the experiences are good, but if you really want a team . . . Our team here is not working well, they have very few joint publications, except Lugo has trouble with English. That's not the only reason but Pete Weaver and I have written more than one thing together, and I have with other people and isn't that I dislike them. Well, I've got one that's pending now with one of our technicians. But I think Ph.D. requirements for science could be made better. I'm not as familiar with it as I should be now, but I feel that an awful lot of Ph.D.s, they are like Oppenheimer, they didn't do anything but read the newspapers. How can you use a person that really can't interact well with others?

HKS: Well in the academic world, 10 years so competitive, a young professor doesn't dare stray over to another discipline. The purity issue, say in the School of Environment for example, either you're an economist or you're not. An environmental economist you can't get tenure as an environmental economist because he got a department that will chew you up, you have to be a pure economist and so forth. That must also rub off into . . .

FLW: Yes, and one of the things I've observed is that the universities have been so well endowed by NSF and by AID that a great many of the faculty assume a degree of omnipotence in tropical forestry ahead of

their really having and its hard to call the kettle black because none of us know it all, by any means. But its amazing how many universities are bravely sending, you know, really green people. Assuming that they can break new ground and, one of the last things they do is to find out what's already there.

HKS: In a botanical or biological sense, is there a generality one can make about tropical forests that you with your experience can go Africa and see things that me, without tropical experience wouldn't see, or is Africa so different than . . .

FLW: There is, but the chances of them being promptly useful is small. The people that we're dealing with in the tropics are against the wall, and they are doing what they do to survive. They are not all dumb, and they have run through a lot of the alternatives that they are not using. Maybe this generation, maybe the past, and its not evidence. And we wonder why they don't do some labor saving way of doing something or something else. It's a very precarious supposition of ours that they haven't thought of it.

HKS: The only analogy that I can make then, and its not necessarily apt is in history. There are historians of world environmental history, and I'm having a tough time with the 1890's in the United States, just one decade, understanding, and this is where I focus. There's a major turning point in American thought about land, just before Teddy Roosevelt came in.

FLW: You were talking about that in Richmond, right?

HKS: Yes. A person that is involved in international forestry or tropical forestry, this is hemisglobal. I mean, how does an individual do that, no matter how bright they are. And yet you're seen as doing it, they send you all around the world to go to meetings.

FLW: Yes, and I've been at it long enough so I don't expect to more the ponds very far in any short time. I'm much better received abroad than I am in the U.S., and it's dangerous because one will give platitudes and speak off the cuff and people are taking notes, you know, and they come to you later and say well if that's true could we do this, and so forth. And you realize that you have a lot of leverage if you use it right, and you have to be careful because people will find out you're full of folklore that isn't well founded, somebody else found something else, you know. People are fond of bringing that up. It's an area where you would think that college professors would, by shear caution with use of facts, would be learners more than they would be preachers when they go abroad. And yet we all seem to think that AID expects us, an maybe they do, to implant something of our own on those people as a result of what we spend there, to bring them closer to us.

HKS: Uh, huh, sort of a high paid Peace Corps.

FLW: Yeah, that's right. And I'm a bias person with regard to sending out university people, because it often is them instead of us. And I know we can't handle the extra stuff yet and have the people or anything. We don't have some of the bread they have, of course, historically when you haven't had much on the social side or agroforestry side, so we should only be considered for worth. But when you see the University of Idaho as a strong AID candidate for work out in the pacific or somewhere, and Steve in Austin is another one which is closer to Mexico, Syracuse we've always had, and Michigan State is strong in Columbia. People were drinking cocktails together or something and they hit it off, and the Dean of Michigan State was a powerful guy and got support and went down to Columbia and set up programs. I think Columbia's probably better for it, that's not my question. It's shear audacity on the part of many people to assume we've got some people who can help you. The assumption being you need help. The assumption being that we have what you need is not automatically right. Later in this I can expound more on this, but I really feel that there's a lot wrong with the way we are approaching this problem. I know mine's only one opinion, but I know things that have worked for me and things that haven't worked for me and I don't think anybody else believes it. That's the problem.

Okay, I don't think there's much on the Ph.D. except that, of course when I got it, I got an advance some time after that, but none of the promotions I've gotten with the Forest Service have I had any warning on, except the one when I came to Puerto Rico, which they told me would be a two grade jump. One of the

interesting things about my career, which is a commentary on the way things are, is that the first 15 years of my career I made six promotions and the final one I was the youngest person in my grade, practically. When I got to 14. And the last 35 years I've had no promotions. There's a message there, I think, that I'm not hearing well.

We come back to Keith Arnold. Keith was a classmate and he went to the California station, it seems to me, fairly promptly when he was in the Forest Service, as director. I knew him as a person in fire management, I think that was his specialty. He was in California, I think, before he got his degree. I didn't know what his degree was really all about. Keith was, as I saw it, a very smart person. While he was in the research organization he was responsible for a proposed change of policy which would have kind of turned research upside down. I've forgotten all the details but it made some enemies. People thought he was off the wall. I don't think it happened. As I recall he never came here, I don't think.

HKS: Is "off the wall" a nice term for innovative, or what?

FLW: And worse. Innovative, certainly, and maybe unreal in a sense that he was probably doing things that gave the impression that he was just trying to be different. Research, if you know, is stayed and its full of old people that are in ruts and things, as well as a few young people. Right now there aren't too many new young ones. We seem to resist. I went to a meeting in Jackson, when I was at the Southern Station, there were all the scientist there, and the resistance to environmentalism is so vivid still, and you'd think those poor guys would have finally thrown the sponge, or at least kept their mouths shut. They didn't.

HKS: Is it a loyalty to the agency you see, or what. Is that where the resistance is?

FLW: Well, what Fitell says is that in the early days the Forest Service disciplined the heritage of Pinchot and people with such that any person entering it, like entering the army, had to make an adjustment in his way of being--promptness, compliance, following rules and so forth, and true loyalty--this was a requirement. And these are people who came in with that requirement under Russ Reynolds and all kinds of people who are now considered, you know they are gone, but they were powerful people. And they made that adjustment, and they see new people not making it and feel that the outfits became as we are not adhering to the line and getting the same amount of esprit de corps, discipline, whatever you want to call it that we had before.

HKS: Like a father looking at a teenage son, maybe.

FLW: I think that's an attitude many people have. In her talk in Richmond, Fitell said they are totally entitled to feel that way, because it's true. And her point was that, not withstanding that, if they bring to the outfit a more true reflection of the clientele of the Forest Service and therefore modify our decisions, our programs, our expectations, closer to that the society expects the end product is better, even though you only got 85 percent of what you worked on, you know, how many fence lines you've checked or whatever it was. That's her response to that, and I subscribe to it, I think its right. But I haven't seen it work and its not very tangible, but I can believe it. Most of them have only five to seven years left in their careers and they are seeing a complete Jericho Wall of destruction kind of, their world as they saw it. They went out and they struggled to make this tree grow straighter than that one and it turns out that nobody cares. That kind of a situation is they foresee. And I think they exaggerate the change, and I think its not that much.

HKS: Research is often criticized for not being a part of the Forest Service, they don't wear the uniform, they don't have the allegiance to the organization. But what you are saying, at least the older generation scientists really do have a personal identification with the agency and not with their discipline.

FLW: Yes, but its not necessarily with the National Forest, its with Forest Service research. They are the ones who created in the National Forest System the apartness, because they were highly specialized, knew more than you guys, put out bulletins that were unintelligible. All that happened early, not just now.

HKS: So environmentalism is perceived as criticism of research findings and analysis.

FLW: Environmentalism is seen as playing down silviculture, its the bottom of the heap now. Timber management is supposed to be getting less money relative to other kinds of research, suggesting that what they call the hard core forestry, is becoming hollow. That's kind of the expression you get. We're assuming the trees will take care of themselves, we're are taking care of the people, we're are taking the water, we're taking care of the birds, and everything else.

HKS: Holistic forestry, I guess.

FLW: With a hole! I was surprised because I recognize it as backwardness. I didn't realize that we were going to be so slow to change to adjust to this. I'd have even thrown in the sponge a long time ago and figured well, I'm a bird watcher, that's how I started.
HKS: I worked in research in the early 60's in Portland, as a very junior scientist.

FLW: Was Leo Issac up there?

HKS: Leo was retired, but Leo used to come over the coffee break. But I was really amazed and disappointed . . . he was retired, but he would still come by the station and talk to my boss who used to work for him in Munger's time . . .{ Sondenspring 367} came out, and DDT was challenged, and { ragiocarcen 369 }, and I thought the response from the scientist I played volleyball with on Thursday night was disappointing, in that they rejected {Sondenspring 373} and never had read it. I mean these were not intellectual purist people, was my feeling. I was pretty gung-ho to be a scientist.

FLW: Rachel Carson had a lot of enemies who praised her too much. There were great many who probably did read her, and worshipped her and that set off people who hadn't read her.

HKS: When I read it I thought this is what I learned in forestry school, that a biological control of its insects is more desirable, not necessarily more effective, but it would be a goal. And I didn't see what the criticism. The criticism I felt was at institutions, not of the individual on the ground. But anyway, this is your interview. These were scientists, officially, just rejecting science out of hand. The may you might see a forest supervisor who had some bugs on his district want to spray for them, rejecting it because he had a problem he had to deal with. Well, anyhow.

FLW: I think scientists are very careful to classify whether a person is a scientist or not sometimes, judging them. When I got back from Richmond Ariel Lugo some stories about Carl Sagen, and he said "you know the national academy didn't accept him", just that way. He was thrilled by that see, I mean he considers him a charlatan, publicity stunt, shallow and all the rest. We don't have anything left on that page here.

HKS: Nope, nope.

FLW: I didn't add much about Keith.

HKS: That's alright, I put him down because he told me that he went to school with you so I just threw his name in.

FLW: That's right. Well, I like him very much, I followed up his things a little bit.

HKS: Now this next one is one that you've added.

FLW: Yes, that's right.

HKS: Your non-Forest Service activities. I guess these are more of your personal.

FLW: I guess we take them in order. The Puerto Rico Forest Department has not had a professional forester, did not have when they split off from us, they didn't have before, and they've gotten only fitfully in the last decade. I ran the forest effectively while we were in the same agency up to 1953 and knew first hand all the people on all the forests thereafter for a long time. I knew the plantations because Murero and I had

worked with them, Murero was still on board. I was kind of standing behind them technically until I ceased to be director, actually until 1974. And it meant that they were first in the Department of Agriculture. Then when in 1978 the government asked me to head a committee to decide how the government could better organize its environmental activities, and they gave me some money. They said you form a committee, you can bring in a consultant if you want and I got Ed Crafts who was of the Forest Service in Washington to come down here. We found that all of the concerns with natural things were fragmented in government. Theology was in one place, the birds were in a place, the fish another place, the forest another, and agriculture was powerful in central. We had a planning board that Tugwell had put in here. Tugwell was the Governor. And we had Fomento, the Industrial Development which was powerful, and these guys here couldn't speak up any of them to stem the plans and designs of these two forces. And Crafts was quick to see the situation. And he said your only hope is put them together in a strong agency and call them natural resources at cabinet level. And you should have also another planning agency which was at the planning board level which is environmental planning. And I recommended those two things to the Governor and they formed the Environmental Quality Board that's here, the Department of Natural Resources. The Department of Natural Resources combed together all of those agencies that are thrown into more than they had. It was chaos at first. In the first place this society doesn't produce people well prepared for either of those directorships, and they tend to be political people. We've had some rocky going but they've been going ever since. Natural Resources has gained by it I think. This was something that came to me because I was, strikingly as a federal person I had no political, I never voted here purposely because I found out all my employees knew what all the other employees party was. I figured if it was that transparent I don't want to be a part of it . . .

Wadsworth, Tape 6, Side 1, December 1992

FLW: I became kind of a Bernard Barukin in one sense of being untainted by the local pressures. I was married to a person from the States and I got to be known by some of the people and so I got called on repeatedly for this kind of thing. I worked on a planning board, as I said yesterday, on deciding areas that ought to be kept safe. We wrote the forest law, we got the planning board to put three circles around the Mekieo Forest designating intensities of use to prevent high rises and stuff right up against the boundary. It's still in effect, and there is a five acre limitation on lots. There were a number of that kinds of things. I was called in on a plan for island of Pelagro just east of here, and that plan is still in effect. All the state forests we resisted invasion by highways and changes, you know, that looked like they would be popular. Our effectiveness maybe has declined over time because in the first place there's a great many more people interested now and we have a smaller share, you might say, of the influence and I'm no longer director of course. I'm still called by, for instance, the { Medoria Minorial} candidate that failed Maloi. Munues got me on a platform committee for the environmental platform or party in which we set up environmental education and plans on the National Forest and that kind of thing. Well those come by telephone and I don't know have any particular advance notice on it. That's a long history that come out of being among the agronomist in agriculture at the experiment station. I knew them right away, we'd go out and see their cropping, and I'd spend a lot of time looking at tomatoes and vegetables and things that meant nothing to me as a forester but they got to know me and then I'd say well, why don't you put trees around the outside of farm. And little by little at least forestry penetrated. There were times when you might say well, the candle is pretty low, what is going to survive and you sort of feel well, if you leave it will blow out. And there are some times like that. Agriculture now fully accepts that trees are a part of agriculture. They don't think they are an economic part of it, and I don't blame them. But they accept that there are places on more farms where there should be some trees. The demand for trees from the state nursery has held up, in fact, for exotics, which is more than I hoped for. I thought they would stop the planting of pine like they did in Hawaii, but they haven't.

HKS: Is there competition for land between farm and forest still, or is there a balance now?

FLW: Only four percent of the island is in public forests, state of federal, and the rest of its being all private. Two hundred thousand acres of it, ten percent of the island hadn't even turned to forest in the last 30 years.

HKS: Its because of more intensive agriculture or more imports of food?

FLW: Because people went to Europe or to the U.S. Those are the people that left Puerto Rico, on the poorest lands. And you can go there and find houses with termites having rotted them all down, the

foundation still there, a telephone line or an electrical line into the house unused, all through the western interior of the island. This change that's taken had nothing to do with merits from forestry, all of these trees, none of them were planted they just came right up. The inventory that Weaver made in 1980 and 1985, and now 1990 shows that its still increasing. It went up from 15 to 40 percent of the island under trees at one point, including coffee plantations. Half of the forests are stocked with trees that could be marketable--half of them--by nature. So they have to be planted. Something has come out of this whether it was direct or not. I expect with the new government which is a statehood government so called and pro-federal, the other government really wasn't very pro-federal, will be coming to us. I'll get called in on things and I immediately respond because those are things where you can be effective, where somebody asks you to come, you know, and I'll drop things to do it. I'm working with the Chamber of Commerce on this Bill and I think we'll put it back through, and they have to change parties kind of, but they can. So, there is an element of that. Now when I asked for the day-a-week in the management planning, what started was very exciting to me and I wanted to spend more time on it. We got all the data we could find on all the forests, pulled it into piles for each forest, and once we month we went to a different forest and pulled in several of the people from adjacent forests and talked through the matter of planning. We walked out on the forest to find the points of interest, the areas that should be saved, the areas that shouldn't. Most of it verbally, they made notes. Well the next job was to write the plan and to bring those people in on the plan, the writing. Well, I got stopped at that time but we were almost ready to do that kind of planning. Once that's done then the forests are not vulnerable to every engineer that comes by and wants to put a telephone line through or something else. It just happened in the past. I'm expecting to go back on that, the door I think is going to still be open.

HKS: You mentioned a little bit earlier about how competitive for your time it was.

FLW: But Lugo and Ellos, Ellos didn't want me to spend a whole day over there because he was worried about research production I guess. It was only recently that our Program Analysis Center had a separate problem which was technology transfer. And Washington had to come down and put that in because nobody else believed it was research. And it was Stan {Krugmen 89} that came in said well, if you guys aren't putting this stuff out stop doing it. There's no point. So I got on that, and I'm fully on that and not doing much research now. So the technology transfer is accepted and I'm pretty sure that Foster, the present Citizen's Director of the Southern Station, and certainly the Washington people will buy it. { Hal Chard 84} does. And we are weak with the government. As I think I told you yesterday when foreigners come here we often don't even show them the state government, and if they hear about and then we do show it to them they are difference and wonder, well they don't even talk to each other or what, and it's pretty close to that. And it's a situation that both Lugo and I, as I said, are concerned and we're going to try to change it some way.

The scouts thing I mentioned in 1945 I found that they were not using the camp, it was a beautiful place, a 200 acre area with a lake a lot of forest that the Forest Service planted around a reservoir, were not using the nature, the guys really didn't know what trees there were or birds or anything else. So I got started there in summer camp by being some kind of a counselor part-time, I couldn't have much time. But they hooked me on units, and I had two or three cub packs, I had five different scout units, usually taken over from a leader that had left and they couldn't find another one. I had a couple of explorer posts, I was in charge of advance, in charge of the camping committee, I became the Scout Commissioner, then I was President of the Council for two years, and I'm still on one of the committees, the Nomination Committee. And one of the things I started in 1952 was what was called a nature team, and this was a group of boys 16 to 18 years old who during the summer camp handled 12 nature merit badges in astronomy, birds, soil and water, forestry, the whole gamut, insects, reptiles. And what I'd do there was in the spring, in March and April before camp opens in June, I picked four weekends and I bring in experts in these fields. Saturdays and Sundays. The boys all come voluntarily, 20 of them come. We select 8 to serve during the summer. This year we celebrated the 40th year of this, and some of the boys have become Forest Service employees, some are working for the Department of Natural Resources, in fact the only forester they've got came out of this. There are a lot of them all over, I meet them every where. And there are people who remember the environment, they remember something about their time at camp, and its a rewarding thing because the kids are some of the best kids on the island. And I would hire them if I could, they are that kind of people. And they come looking for jobs. Some go on to the states to work and take advanced education, biology and ecology. So there are some returns on that.

The Natural History Society was begun in 1960 by somebody, I was present on the charter member. It's been going on the basis of a monthly lecture on a Friday night and a Sunday field trip. And we've covered the whole island more than once, all kinds of things, and they have camping trips. We'd go to Mona Island off the west coast and camp for Thanksgiving weekend, or we'd go to Calabra or the British Virgin Islands, we've gone to Jamaica and Costa Rica on special excursions. The objectives of that are not so much militant opposition to things that are wrong as it is education in both the plus and minus sense. One is getting educated ourselves, learning what the facts are about Puerto Rico's environment, of course awareness of its beauty and interesting, the caves, the waterfalls, the cliffs, the birds, all this, and then peddling it. We have a slide program for the schools, we hand out the National Wildlife Federation's Wildlife Week Program which has posters and projects, and we have over time had a lot of interesting things. Up to this year we've been going to the National Wildlife Federation meetings and proposing things. One of the things we've proposed was to get a foundered ship off a neighboring island, and they helped on that, it got off. We've give testimony in hearings, usually rather common factual. Many of the reports we've written at the request of the government, like the one we just did write on the carrying capacity of an island that's over subscribed already, goes specifically to one person--the Secretary of Natural Resources, a member of our society, and he's an active person. So we are a lot more stayed and maybe a lot less visible than some of the newer organizations that have come in and thrive on press because they scream about this Japanese ship, or they pick out some political issue--solid waste or something--and complain about it, or coal fired plant.

HKS: That's the Japanese ship that's in the press today for hauling plutonium?

FLW: Yes. In fact, the people in our society that are sorry that I abstained from voting in Trinidad, because they feel that I should have voted to keep it out of the Caribbean. Well again I say I abstain because I was only presented with one side of it. I think that's a major fatal game piece. I'm afraid there is another side or they would have presented it if it was a poor side, I mean why don't you do it to show people that you've really got the arguments. Anyway, I've been an author of a lot of the society's hearing testimony, mainly because I write, but of { miles ? 169 } is Spanish and I put it in Spanish and somebody else touches it up. I don't always present it. I try not to because the flavor of Puerto Rican life is such that I'm a gringo and even in scouts I find other people to front things because I want it to be endemic and indigenous, and they are much more effective in hearings because if somebody asks questions they come back with a Puerto Rican answer which is much better than my answer which says why don't we do this, you know. I would be apt to cite something in the states, which isn't a good way, its a red flag. And they say, well, in Trinidad they are doing it why don't we? Its working there, you know, that kind of thing. It convinced me when I started that there was so much more to be done with young people and with adults that over time I spent more time with it with young people, and I go to schools a lot to talk. And I think there are fellow scientists here who think that's subgrade work, and it isn't science very much, but you can go to a fifth grade or private school around here and boy they challenge you. And if you don't know why you're doing what you're doing you better think clearly. The beauty of it I see is that it forces you to go back to square one and justify where you are and why you're doing what you're doing. A lot of people I think have taken that for granted for so long they don't do a good job of it, and this law says you must. That's not an answer. There's got to be a reason for forest.

HKS: Has recycling in vogue in Puerto Rico yet? We all have those little blue boxes on our curve every Thursday where I live.

FLW: For an island, a lot of the recycling can't go all the way through because it doesn't pay to ship it some distance. One or two neighborhoods have been selected by the government and they are doing all of this, they've given them the bins and everything else, and they've contracted a company to pick up this stuff, and its costing the government $10 for every $1 worth of recycling we get out of it. Its an experiment. I think the only thing that's being recycled here is glass and aluminum. Paper is not.

HKS: We're under a federal mandate to reduce landfill accumulation by a certain percentage by a certain year, I'm not sure what it is.

FLW: San Juan has a landfill which is, now we call it {Bumberinkin ?? 208}, it's high now, its a hugh thing, I pointed it out to you as we came out of the road. There's a strong effort now to reduce what goes into it.

Paper is a tragic thing because paper is very bulky and it lasts a long time, as they found out, and telephone books, you know, and that kind of junk. No, its happening. A lot of middle class people are sympathetic to doing it. The way hasn't been worked out yet.

HKS: Well, I can see that, because how do you get the newsprint back to be recycled?

FLW: They won't take our toxic waste, the States, anymore. We used to ship it to South Carolina or somewhere. No state wants it anymore.

Break.

HKS: Intensification of foreign forestry as a predecessor of the institute, I don't know how much you have to same on that.

FLW: Not very much, but maybe some. That's referring as ITF as the institute rather than what it was previously. When we were a National Forest and a Tropical Forest Experiment Station here we were set up, the Tropical Forest Experiment Station had a regional concept to it, the Caribbean National Forest did not. We were repeatedly considered to be concerned with Puerto Rico and the Virgin Islands and any extraneous things were just for bonus. Although I got sent to the meeting in Trinidad and one in Montevideo, and things like that, forestry was not seen as clearly a part of the research we were doing. We had a big problem of plantations that were in trouble locally, the Virgin Islands had almost no forestry going, and so they saw as we poor two guys down here had our hands full with {a reap 242} in the Virgin Islands. The fact that Trinidad had been going a long time before we had and course there was work in southern South America was not entirely unknown, I guess, but we learned about it gradually. And when the Point Four Program came in and students were pouring into the U.S. from Latin America for forestry, going to schools or being sent around, the so called International Forestry Office sent them frequently to us because we had Spanish and we were tropical, and it got to the point that there were too many. So we started holding these courses, and we had twenty of those actually, three month courses in tropical forestry which we invited people from all over, at FOA, or whatever it was in the old days OFAR, expense. Those courses started in 1959 and ran through to about 1970. Usually one a year. We had people from Vietnam, India, Sri Lanka, but mostly Latin America. That created the institute. Harper said well let's make you an institute because training seems to be an inevitable part of your future, and so that's how that came about. We can move on if you want.

HKS: Okay.

FLW: I've dealt a little bit with that first thing, the Institute of Tropical Forestry.

HKS: So that's the significance of the name change, because it had a broader role?

FLW: Its because we had such a heavy training load and they foresaw more of it that it looked like an institute was the proper term for this. And it was a decision made by Harper and the research people. And it was recognition that training was a legitimate function. I think they thought we knew more than everybody else on everything, kind of. Various people just felt that there was nothing anywhere else and this is all there is, and so anybody that comes here will learn something. That wasn't exactly true of course. It was easy in Washington not knowing much of the rest of the world to kind of figure well, we're having all these training and all these students, and they often send us some that were not interested in what we were doing, they work was something else, but they were from Latin America, Peru or somewhere, you know, and they sent them. And we could talk to them because the language, and our library became rapidly a good resource. And that I think was a pillar under the institute, was the library, which made it possible also to keep scientists for a longer time period because they don't feel out touch because they can get anything they want quickly in the library or we'll send for it. And that was a big advantage. When Murray left in 1956, or about that, they decided the National Forest and the research, which I'd been handling technically, should go on. Timber management research supported me with that $20,000 for stand improvement in the National Forest. The National Forest was converted to an experimental forest, although it legally is the National Forest still. The experimental forest term is strictly administrative within the Forest Service. And I was named as the director.

And this made me one of the directors of the experiment station, its under the {Clenary 313 }. So I went automatically to the Regional Forester Director's meetings in Washington or where ever they were every year. And I attended the SAF meetings, which directors were supposed to do. That happened for many years. I don't recall, I think that was when I got to 14, that was the time, maybe something like that. It was that time or afterward that the next topic you have, that FAO and the various forestry commissions and more and more agencies, the CATIE was started in Costa Rica, some of the forestry schools in Latin America began, in that area. We became targets for Washington requests to represent the U.S. or ourselves and we got invitations to meetings that the training courses brought, students requests for when they got back for us to go there and help out, or something. I went on several missions for FAO. Two to Chile, and I took a training period. I started the graduate training at the University of the Andes, from there to Venezuela in silviculture, and stayed there and taught it. And those things came not necessarily from Washington, they came from people we had met in activities of some kind. And I always had to sheepishly ask Washington, well may I take this trip. Thinking that somebody would assume that I'd lie up on a beach somewhere and they couldn't go and I could. I wasn't always allowed to, of course, it was expensive. We were getting much more money per research, we were a research project, and we were getting more money for that kind of thing than any other one. If Harper had not been sympathetic and George Jamison after him, we wouldn't have gone to those things. But as I said yesterday, they tended to change the balance of my thinking as to the role of research. How much research was at the base of all of this. I saw so much that looked like what we already know probably could be adapted to their conditions if they knew it without having to do any more research. I saw so many cases where people were making the same errors we did in research. Now I'm pretty sure they have to, but I didn't use to think so. I felt well we could go in there and do them a lot of good.

HKS: They have to because they have to learn for themselves, is that what you're saying?

FLW: Quite a bit. Obviously the more you read the less errors you make, but people right here in Puerto Rico are planting, the Department of Natural Resources, is planting trees in the northern areas that years ago we showed they failed in this climate, they don't grow well, they have a disease that hits them and they grow {380 }, its a beautiful tree and so forth. I don't know if she's read our stuff or not but I've talked with her about it. So I know that there's a tremendous geographical gap to thought processes. I think that maybe we got where we are because we made the errors and maybe other people have to make a lot of them too. It seems time consuming and wasteful, but having someone telling you how to do it, you never know you couldn't have done it the way you wanted to until after that person's gone, and chances are you'll spend the money anyway to find out. What's more, our being convinced that it works here doesn't prove it works somewhere else. Its always that kind of thing. Those are things happened. Harper, I think, we spoke of yesterday as being the person in the chief's staff who was most interested in international work and I think had a lot to do with how we grew here. By 1978 we still only had four scientist, and the National Forest had three people that were professionals which compared with they have 12 and 12 now. They've grown but its slow.

HKS: Was some of this due to congress? They weren't at that time, the 60's and 70's, weren't interested in spending money on that or did the Forest Service not ask for it?

FLW: Congress didn't ever know this, as far as I know. We weren't visible at their levels in the budget crunch. I think it just said experiment stations and stuff. And they could have inquired and maybe some of them did, but my feeling is that it was Harper's benevolence that saw how much we got. We didn't hurt any stations much, we were small. We started with $25,000 the first year I came here and that was in 1939, and the $25,000 is all we got for awhile. It jumped then to $45,000, I think inflation was coming in. When I left we must have had $200,000, something like that, in 1978. And Lugro, of course now, has it up to $3 million or something like that. But he's got a lot of other things going. The National Forest in 1965, which is all we got until I left, then that was when they jumped up and took it away because the region. The National Forest has been going up all those years and we weren't. So they came and saw all kinds of things that needed to be brought up and they brought in engineering work with the roads, they took back the recreation area, did a lot of those things that should have been done all the time.

This last item here, Leaders of Other Nations. The people we trained, we asked for people who pretty junior. Some of them had degrees, this Peruvian I mentioned that's been 19 years, he came through here his first

year, he had degrees, professional of the University of Michigan. But most of the people were in other countries that didn't have the same pattern of education that we had so it was hard to define how much they had. The British call the forester a guard, they call them foresters, and they call the others ones conservators who were higher up. We had difficulty in defining those who came. But a great many of them went to their country, we gave them all a plaque and paper that they had completed the course, they put it on the wall and before long they would be assigned more responsibility. Quite a few of these, which I think there have been 200 in all come through us, became top person in their country in forestry. It wasn't always a very prestigious position because you were sitting at the foot of a table with agriculture or something. What there was of forestry was up to them. And that's one of the reasons I feel sensitive about our giving them a dab of training and then somehow losing track of them, or at least not keeping track. Our librarian, we had a good librarian at one time, she was attractive and we liked her, and she kept her writing back and forth, and kept track of a lot, and they wrote interesting letters, some of them harassing experiences in the sense that they were given tremendous responsibilities and really didn't know what to do. I assume many of them didn't last long because of . . .

Tape 6, Side 2

FLW: Item 6, Latin American Plantation Data. The Latin American Forestry Commission Research Committee, which I presided volunteered at a meeting we had in Ecuador to submit data on the best plantations that everybody had to put out a publication to show how much trees would produce and sites, and that. And then they didn't send them. So I went to Harper and asked if we could go and get the information, we could standardized, take our own equipment along. And he financed it. Bruce Lamb went through Central America, Brisco went to some places, and I took Brazil and Argentina, or I took Argentina and Chile. We put together in 1960 a booklet at a standard form, and we asked the readers to send in more information. We got quite a little bit later, and our copy in the library has the amendments added. I don't think it ever happened to anybody else. Its a document that is still cited some. There's a lot more and better data now in most places. But it was a start. And of course we honored every country's submittals, sometimes very poor data but at least enough to indicate that when you get to the country go look at that, its a plantation that they think is good. We found some with Spanish cedar which is very hard to find on good plantations anywhere. So that was done and FAO was flabbergasted when we turned this in, with a cover on it giving credit to the Latin American Forestry Commission. They were not used to having commissions produce things like this. We got a letter from Rome congratulating us on this effort and so forth. FAO, I think, was sensitive because nobody seemed to be giving them credit for things and when this one came out, of course we at the Institute got credit too. We made contacts in every country when they did these.

The study of hurricane damage is something in which I haven't been very much responsible. I mentioned that I had looked at the data in one virgin plot, and we have some other plots that I've looked at where the damage isn't very great, but Fritz Contana and Lugo are the main that have worked on that. And they got out whole issue of Biotropica discussing results of about a dozen scientists that are studying the effects on birds, on fungi, on succession, on all different things. The outcome from my view silviculturally is that we've learned what I think we should have already known in that the forest could withstand it. The hurricane didn't go right over the forest but the one in 1932 did and one of the plots we have was right in the track of that one. We started the plot 14 years later and we've learned now what happens between hurricanes. The trees that withstand it just come right out and keep growing. Those that are knocked over or the openings created are filled with pioneer trees that come growing up, they short-lived and they die out usually just before the next hurricane with seed all over the forest and then they come up again. The so called opportunist have seeds that last on the forest floor and they're always waiting for life, they don't germinate without a lot of light. These kinds of things the hurricane emphasized and the ecologists who came in to study it thought it more wondrous than I did because they saw nature perturbed by nature and not by us. They kept using the word damage, and I said that isn't damage. They're riding a ship here and there was no hurricane for long a period that this was not the way it should have been, they are correcting it, and they are probably knocking some trees that shouldn't have been here, so to me its an element of the forest in this climate.

HKS: Since HKS has been populated by Europeans since the 16th century there must be a fairly good record of hurricanes. Is there an average period between hurricanes, in terms of forest management, that would be useful?

FLW: Not very because this one, 1932 to 1989 is a long time. We had two of them through go three weeks apart one year. They weren't bad ones. They could have been. The variation is greater than the average. It isn't very easy.

HKS: Put it would put a red flag on introduction of exotics in the hurricane zone.

FLW: Well they came through, ecologists were searching for evidence that exotics were bad and it helped. I think if I were managing the forest as I would want and keeping it open enough so that all of the trees were growing well we might have less damage not because it was open, but because the I'd accepted and were successful here without us and therefore tend to better root systems or smaller crowns. There are two strategies it seems like. One is to have strong wood and roots and rocks. The other one is let your leaves go. Some of the weakest woods trees let the leaves go and just stand up there. Palms do that. They just laugh at it, it just goes right them, you know. Then they put the leaves out after its over. Those are kinds of things you learn. I think we could change our species list slightly to favor the ones which records now show went through the hurricane best. And there might be some gain there. This time if we had good logging capability we would have salvaged almost everything. We lost, I think, 100,000 feet of mahogany, because the environmentalist wouldn't let us go back more than 150 from the road. They didn't want and tractors in the forest, and we said there it is, beautiful planted stuff, you know nice big trees just sitting there. They are full of bugs now. I do think the studies were not all in vain at all. I was interested myself, but I'm proud of what the forest was able to do. I really think that it threw back in the teeth the comments about destruction and leveling and all that kind of thing which people who flew over in the helicopter had said had happened. They'd only see the ones that were flat, but the ones that were standing up without any leaves they couldn't see anymore.

HKS: It's like some of the publicity on the Yellowstone fires.

FLW: The mangrove. . .

HKS: First of all, what is a white mangrove? Are there different colors?

FLW: Well, that's one of the species. There are four mangrove species in this hemisphere. One of them generally called white, because the wood is white and the bark is grayish white. There's black mangrove and there's red mangrove, then there's {butman wood which is forest wood 93}. White mangrove is the most extensive one here, it grows right straight to about 12 inches in diameter. We thought it would be the perfect species for posts and for briquettes. Its pure forest, you cut it and it regenerates quickly.

HKS: I'm not sure I really understand what the physical limits of mangrove is, where it grows?

FLW: Mangrove is on tidal swamps, which have occasionally salt water. They are all on the shore, and they may be dry much of the time. In flood time or when the ocean has a surge and comes in and they are salty. And they'll kill every other plant because of the salt. And these forest species are salt resistant. The most resistant, black mangrove, will survive in the cul-de-sacs in little pools where salinity is gone up to double that of the sea because of evaporation. The red mangrove, one of the big roots standing right in salt water all the time. So they have escaped their competition because they can live where nobody else lives. And one of them actually uses salt water in its system.

HKS: Following our conference in Costa Rica a couple years ago we had a little planning session with people from around the world on what the next conference should deal with. Someone said that we should have a whole conference on mangrove forest history. That surprised me, I didn't realize it was that significant. I don't know if its only significant in a scientific sense or economic sense. I hadn't really thought about mangroves as other than sort of a . . .

FLW: Well, it was very useful. In the first place was on the coast. The mangrove/fishery relationship is very intimate. A great many coastal species reproduce in the mangrove. They can escape enemies in the roots and so forth, they lay their eggs in there. Tarpin is in there. Fishing in south Florida is in mangroves. The

tannin in the bark is used by fisherman with ropes. They rub it on their ropes so that they don't rot in sea water. Ships have all used mangrove for that. Mangrove wood is durable hard wood. They used to make keels and bottoms of small boats out of mangrove. It's used for fuel. In the Far East its a major thing, and many foresters have been killed trying to prevent people from stealing mangrove wood at night. They come in boats and sell it in the daytime and so forth. I mentioned yesterday the long history in the Far East in the silviculture of mangrove {motorcycle or something going by - 134 } There was question as to how to get the mangrove to grow, choose between the best and the worst species. Historically its been very close to people. There probably is an interesting long history about it. All of San Juan, the problem of getting into San Juan Harbor was mangrove in the first place, it was swamp. Of course they've cleared it all now. Mangrove is being cleared all over the world. Some places { static - too much engine noise }. It was grained and then used for agriculture, a lot sugar cane was produced on mangrove lands here. An airport built on mangrove. So it does have an interesting thing. Well, our study was based on the assumption that white mangrove {engine noise 147} was several thousand acres. We found out that it wouldn't absorb preservative. And so, as I mentioned Shutenoff developed an incising machine where it pushed the pole through and knives poke holes in it and then you soaked it and it picks it up. And also the environmentalist, believing that mangrove was so important to fisheries, have practically put the kibosh of any cutting of mangrove. In fact you have you genuflect as you go by it almost now.

HKS: It must be significant in coastal erosion.

FLW: Yes. Formerly it was said that mangroves build land. What they do, of course, is they go into a tidal area and they stabilize it and riverain sediments are piled up in the mangrove but never above sea level so that the minute you take the mangrove off the sea will eat it up again and go back. The net increase of land is not like an island or anything. But this was an early study we made. We also thinned out the mangrove and found the same thing in Douglas fir, in that the trees left would blow over, they are in mud. And so we cut clear. And we used the border selection. We cut a strip, a chain wide and 10 chains long, across the wind. The idea was that the seeds would all fall in there and regenerate. And the next year we'd move toward the weather by one chain. We found out that the seeds don't fly, they swim. So it really didn't matter the size or shape of the opening as long as the water moved around in it. We got regeneration anyway, right away in two years you could hardly walk through the place. In seven years we had fence posts, nice fence posts. So that was the study we made. Its been cited a lot, it was written up in 1953. Well, as I say mangrove now, other places can use it, we can't. We've often had people go to other countries to deal with mangrove problems. But we aren't studying except ecologically here.

A global study of tropical plantings is something that was done really by Lugo. I don't have much to say about it except that the document, which is not a publication I don't think, it was just briefly, and just put out in small number of copies. They went through all the stuff in the library and they communicated with people in other countries to get information on plantings. And then they had a man on a computer working about a year and half in putting it together. And they made a lot of curves showing growth and stuff. And frankly I don't think its worth much because they admitted themselves that the standards in different countries were all different. The minimum diameters they used, and in some cases they weren't sure of the bacillary, the number of things per unit of area. They just put it together and I can't compare one thing with another in it. It was just a record of a good job done and we learned something from it. People are very poor in the tropics in giving you enough information on their measurements so that you can compare with something else. And I don't think it's deliberate. I think its just the don't thing. So that one I wouldn't add much to it.

The andrology of Puerto Rica. When I got here the New York Botanical Garden had already published through the Philadelphia Academy of Sciences a scientific survey of Puerto Rico which had two volumes on the trees, on the flora. And we used that, it was Brittan and Wilson, and we used that constantly. And my assistant was always very sharp on it, knew the species. And I was attracted by preidentification. I was an assistant in Ann Arbor in dendrology, and so I got to know a lot of the trees when they were measuring the plots and doing things. Dr. Little who was a cabin mate of mine in Arizona--when he found out I was here he asked me about the possibility of a book on the trees in Puerto Rico and the Virgin Islands. And of course I welcomed, I knew he was a good botanist, and we housed him here in our basement. He was a very simple liver, he had a cot there and a typewriter and a light and table. And we would bring him bananas about once a week, and he'd go out and buy a little bit of supplementary food, but he was in pretty good shape. He went

all over the island and generated the Volume 1 which was published in 1964 with 250 of the local species, published in Washington in English. And I was junior author on it. I provided the local information as to where it was found. I always used field characteristics to identify, never botanical ones. He used botanical ones always, and they were required usually the fruit or the flower and you couldn't get it all the time so I had to use color, leaf shape, roots, or something. So I added that, and its local names and what its uses were and that kind of thing. That was published in 1964. Twenty years later, the second volume with 500 more was completed. Little had come back down and I worked with him on that one, and Hose Meraro was a third author on that. And those are still the standard reference on trees here. Volume 1 was never republished by the GPO because they said it took too long to sell. They made 5,000 copies and it took them eight or nine to get rid of them. And they felt it wasn't a good deal, they didn't want to tie their money up. Little and I ran 4,000 more, sold them, and then Little said he was through, and I ran 5,000 more. I've got about 300 in the house here. No, 500 copies. I've got about 300 here in the house and I'm selling them as people want it. Volume II and I are both available. Volume I was republished in Spanish by the University of Puerto Rico. It's out of print now. Very popular, we put color plates in it. And Volume II we have in the library. Both in English and Spanish. With 500 additional species. When people come in for that, they say well where's Volume I, and the librarians direct them to me and I have copies for sell, illegally more or less. But its the only way I can reach the audience.

HKS: What percentage of these species are also in Haiti and Cuba, or Costa Rica?

FLW: We've got those percentages. On the national forest there are 60 trees that go all the way down to the southern South American Continent, around Central America. Sixty of the major ones. Some of them go all the way to Argentina. I think of the 750, almost a third are exotics. So you'd say there would be 500 more or less that are natives, 530, I think, is the number we have for natives. And of those 530, of endemics there's probably 100 to Puerto Rica. And the rest of them are all in other Caribbean islands, Florida, Mexico, Central America, or South America. One or other or all. Some of them are very widespread and some are not. We have quite a few endemics here. The island has a 100 million years isolation, and so the endemics are all species that got here in some other form than they are now. They've changed, they've evolved since they got here, to become different than their parents. We have magnolia from the states. We have a gymnosperm, which is a potocarp. Thirty-five species are in Dade County, Florida. Only one goes out of Dade County, and gets up to Louisiana and Virginia. Its a low shrub up there and its a hugh tree, 2 liters in diameter here, syrilla. Its called swamp syrilla in the states, or southern leatherwood. This produced a great deal of notoriety. We sent these books all over the Caribbean. People use them all the way to Trinidad. I was in a meeting in Trinidad recently and brought back a bunch of orders for them from people on the islands because they are almost all the same species in the Lesser Antilles. And its useful.

The next item, Analysis of FAO Tropical Statistics is one that Lugo has directed. What he's been concerned with is that FAO has been the authority worldwide on forest areas, timber and volumes, cutting rates, planting rates. And FAO, under Landly the Frenchman, made a restudy in 1940, and it came out very well publicized because they found that deforestation was progressing 40 percent faster than they had predicted five years earlier. That was just one statistic. { Engine noise 320} better forest areas for the country, some of which like the Guanas, it's very hard to get any statistics on. They sent people around the world. One came here, came to our library and milked us for all the information we had on the areas. And so Lugo sent somebody to Rome and they captured, I think, pretty much what they haven't yet published in the 1990.

HKS: Is satellite imagery more than a gimmick? I mean it's fascinating to look at.

FLW: You're baiting me, you're baiting me.

HKS: Well, let's talk about that because that gets all the press, deforestation, and all this stuff.

FLW: My attitude toward it is guarded because I know people look at my grey hair and figure, well, those people will all be gone before long. Going father away to get one more point behind the decimal on how much area is in what kind of use strikes me as interesting but not very useful. We have a man who is right in that field now, he's gone down to Brazil to {start up a midwork 341} of some kind to get atmospheric conditions. I think in some countries, like the Guanas, it could well be that satellites are more reliable than

anything else. But I think when you recognize the difficulty of drawing a line as to what's forest and what is not when you're on the ground. You know the Forest Service's definition is 10 percent of the land, at least anymore than 10 percent of the land covered by trees is forest, something like that. Well you know from satellite you couldn't draw that kind of a line. The chances are you'd throw everything in or throw everything out. I think the wiggle of a pen or whatever it is could be guilty of all kinds of misrepresentations. I'm pretty sure from airplanes we haven't been able to do much with species. Some species when they change leaves the whole crown turns reddish, and if you're on infrared at that time you can pick it up. But they don't all do it the same week.

HKS: I've seen the satellite photos before and after in Southeast Asia, and it's striking, in terms of what they are showing you about deforestation. They lost 60 percent of the forest cover.

FLW: But its usually years apart.

HKS: Oh yes, its twenty years apart, or ten years apart.

FLW: Well, what I don't know is how much better that is than what they already knew before they did it. And Pete, knowing it precisely versus approximately doesn't change my direction of flow a bit. We know its a problem, we know its a tough problem. Go and find out from the people the causes and the benefits and the troubles and all. That's where the action should be, not in just using gimmicks as you say to better our precision. It doesn't look to me like we need a better precision. We know the world's going to hell. It's that kind of a thing. But these new statistics--Lugo, I think, had the feeling that FAO was going to slow in getting them out, they didn't have much money. And he wanted, I think for his speeches and his programs and other things where the emphasis should be on our program, to get the latest stuff so he sent somebody over that got those statistics. And as far as I know except for maybe a few sentences in introductions to speeches he's made, we have not done anything with this. I think its in the building somewhere, but we haven't done anything with it. And I haven't had any use for it.

HKS: What form is it in, just raw data?

FLW: Probably, by country. Probably on a disk, that kind of thing. What's in my book is the 1982 data. It may be that I'll get new data. I can just substitute a new table, I don't know.

HKS: If is on disk, let's use this as an example, if Yan Larmann wanted to get at it for a graduate student, would you dump it to disk and send him a copy? Is it available for use?

FLW: Very possibly it isn't, I don't know. I think we offered them a lot of information and probably got it in trade. I don't know the answer to this. On the other hand, I wouldn't be surprised that Larmann may have done some of the same things we did, or his students did. If you go to Rome you might be able to see it. Landly, who was underneath it but I'm not sure he's still there, is a very fine person and will not be, I don't think, possessive about it. But he has bosses that, you know, are fighting other agencies, departments, and everything else, and FAO is in that field. So really don't know. The reports they make on countries are property of the country, and you don't get them unless the country gives them to you, or you know the librarian and propose marriage over there and say on one condition, I get these things. We had a woman over there who was really good, she would slip us these things, "they are just going to go in our library, we're not going to use them." But often these reports carry recommendations the countries don't wish to carry out. And if the public knew that FAO had recommended this and for some political reason they weren't doing it, it could be a source of criticism of the government. So the government plays it close to the chest. They only make a few copies. Unfortunately the following expert that comes in doesn't get it, and retrods the snow. It's a lot of that going on. We had a hard time getting the FAO inventory on the island of Dominica down here, they just finished two years ago. And the argument was that was just fresh information we haven't yet worked on. We had first priorities with the government of Dominica, so we were meddling. Well, we didn't want it that bad so we just said fine.

HKS: All these propeller driven planes, they go to local islands?

FLW: Yes, the Virgin Islands.

HKS: How far is the next island?

FLW: About 60 miles, its a flight of about 30 minutes.

HKS: Is that St. Thomas?

FLW: Yes, St. Croix about 45 minutes. We didn't talk about it, we could have, maybe this is not the time, maybe later. You go and come back the same day.

This meeting we had in Ecuador when I was chairing the research committee, we drew up a long list of things that the research people thought they lacked and needed. I was pretty sure I knew ahead of time what most of the things were. So I had an outline, we talked to that. They all agreed that the commission coming out of the saying we ought to do these things would help them at home to get support. So I went to Harper and asked him if we could support a study of this kind. And so he supported it. And I went to 16, the first one was in 1957 I guess. I went to 16 research institutions. Mexico . . .

Wadsworth, Tape 7, Side 1, December 1992

FLW: I went to Peru, Chile, and Argentina. I had a form which I filled out which had to do with who the director was, what the program consisted of. I had used the Oxford classification subjects that they were studying, the number of people, what kind of degrees they had. My first approach, I learned to approach this way, I went first to the librarian. And I hadn't even gotten into the boss or anybody by that time. And I had a card. They knew me because of our library, we had sent them things, most of them. And so they were glad to see me in the library, and we sit down and talk. And I would ask her how she operated, to find out how she selected what books to get, the policies about students use and all this kind of thing. And the librarians, all of them, were harassed people in the sense that they had almost no support. The faculty or the scientist would typically remove the books from the library and not return them. They never had enough copies for student use, and the faculty of the schools used the books to keep themselves ahead of the students, so the students didn't have access to them. One librarian said that she never told anybody when she ordered books. Then she'd put them on the shelf and hope that the right people would see them. If somebody from the faculty decided to take it out she couldn't stop them. Along with this I heard a lot of the gossip within the unit. It was obvious which people she liked and which she didn't. And something about how well people worked together. I didn't prowl, you know, the people just flowed over that, kindred spirit. I told them about the problems of our library to keep it going. And then I would go and talk to the guy in charge and get a very different story of how things were. Usually much better. But then when I made it clear that I was there to identify the things which he needed and to present a joint picture for the whole of Latin America so they might be able to get then, of course, he loosened up and explained some of the shortcomings. And there were a great many things. One guy was actually crying before he got through. Generally it was personnel. They talked about money always, but they wanted better trained people. They did have people. It looked to me like training might be the answer in sense. They weren't begging for equipment so much, in fact I don't think they knew what they should have, they weren't that advanced. And many of them were using just kind of people off the street to do things and calling it research. And they were buffaloed by other agencies that were more popular. I was surprised at the end of the this thing to find how common the problems were, that is to more than one institution. And it came to a head at the next meeting of the commission. We listed some things that ought to be done from professional status to salaries, all the way through to a more balanced program and we listed those things that should be done regionally versus nationally. So many of the things could be done centrally in research, you wouldn't have to do it at every country. But every country wants to do it. That's the trouble. That's what I was saying. They don't accept somebody else's givens, you know. Well, that went into a FAO meeting and they asked for it again for the world conference in the Caribbean in 1966. So I went back to the same institutions and did it again. And it was a copy. There wasn't much change. And if you did have the first one it was useful, but if you had the first one you kind of wondered why did you make a second one. There were more institutions, and now there are a great many more. And I have a suspicion that they would be much more grasping, because they've all seen the magazines advertising gadgets, equipment, that kind of thing. And that I think is a question as to whether this kind of a

thing, as I did it, is worth it again. It was maybe a stage we were going through. But it gave us visibility and it did, I think, clarify to a lot of people that saw the reports how general the problems are and how much there is to be gained by regionality of approach. I had visions of it maybe increasing our role, because we could do a lot of the things. I'm not sure it did.

HKS: Just sort of a aside here, a nomenclature. We use terms, Latin America, Central America, South America. What do the people who live in these areas call their regions? Is this first world putting labels on the third world, or is this generally accepted. Latin America to me would be Mexico to Argentina, right?

FLW: Right. Everybody believes that, and the people that are in that area with the exception of the English speaking areas, call it Latin America. But you have Belize, you have the Guanas that are not. And of course FAO says Latin America and the Caribbean, and I think AID does the same thing. The wider Caribbean includes Belize, includes the Guanas, as well as the islands. I use the term Tropical America a lot, or the America Tropics. And that has no ethnical bias to it.

HKS: We called the proceedings from our Costa Rica conference, Central and South America, based upon advice of OTS at Duke to given identity to people in Central America rather than lumping Costa Rica and Nicaragua with the rest, sort of protocol, I guess.

FLW: I wonder if you went all the way to the south in South America. Did you?

HKS: No, we had a few from Brazil. That's it.

FLW: It could well have been tropical South America. One of the oddities is that Panama doesn't consider itself Central America.

HKS: Where is it?

FLW: Its Panama! In fact some of the documents Trialba say Central America and Panama. They don't want to offend anybody.

HKS: Is this trivia, or is the really significant when making a study of the area. How do you advertise. Like you said, analysis of Latin American forest research. That's okay between you and me, but is that what it was called when you did it?

FLW: Yeah, I think. I don't know what's on the title of that. I've got it here.

HKS: I don't want to make something out of nothing, but the sensitivities.

FLW: I went to Chile and Argentina which were peripheral, and Mexico had a lot of non tropical too. I may well have used Latin America and didn't include the Caribbean in the sense that I didn't go to Jamaica on that. There was nothing in Trinidad on research at that time. So I think it was Latin America, truly. Anyway, that's a question we can maybe straighten out. Mona Island has an "a" on the end, instead of "o".

HKS: For the record say where it is and where it is.

FLW: Its 45 miles west of Puerto Rico, half way across to the Dominican Republic.

HKS: Its administered by Puerto Rico?

FLW: Yes. It is an island that was claimed by the first governor here from the Dominican Republic, although its closer to that island and he was given it, so its always been on our side. It has fauna and flora somewhat of the other island. About the first year I was here, in the CC time there was a CC camp on it, it was a state forest. And they did some tree planting and they hunted for treasure, they built some roads.

HKS: The CCC hunted for treasure?

FLW: They had a guy come down from Harvard with some maps that he got from the British Admiral. And they went all over digging in the sand and looking in caves and stuff. There are still people looking for treasure over there. There's a long pirate history of it. That's how I got deeply involved. I went over because we were looking at the plantations, and we went over there to see how well they were growing. And we got out a report of the Caribbean Forest which was negative, but they were growing but they weren't going to be good timber trees for mahogany, there was casperina, a number of things. Unfortunately I learned later that they had knocked down native forest to plant them, which I wouldn't have done because the island is sandy, and dry. It no place to produce timber. We may have hurt some wildlife. I don't know. Anyway, we went over there and made that report and I fell in love with the island. It's about 14,000 acres. Its a slab that's 200 feet above the sea. It's got good beaches on three sides, its got interesting caves and inscriptions that go way back in the early days. And a lot of Indian relics. They've even found ceremonial areas marked with stones and things. Aside from taking remeasurements in those areas on the plantations, I did some exploring of the island. Then tying into scouting I took scouts over there on expeditions, its about a six hour trip on the boat. There's an airport there now so you can fly in. I've continued to go almost every year since with the natural history society, scouts, or somebody. And when we got the Department of Natural Resources formed they wanted a plan for Moat Island and they asked me to lead a team of scientists to prepare a report on what to do about the island. And so they gave me some money, I've forgotten how much, but I got fourteen scientists to cover everything, the water, the climate, and all kinds of stuff. And we went over there a couple of times, but most of them stayed elsewhere. And they put together a report, we were about half way through when we heard the development company was planning to put people on a port there and put in a lot of oil tanks, because they were bringing super tankers that far. There were no supertanker harbors in the eastern U.S. So smaller tankers were going to take it out of there. They were going to put cement plants and power plants. They were going to bring in a 10,000 meter air strip, 2,500 homes for people living there, develop water from the sea. It was a hugh plant. I was in the middle of this study and we had located a lot of endemic species, there was an iguana about four feet long, its only there. Its a big thing. It's common. I decided well this report won't stop any of that. Let's just go for demonstrations. And so I called up Phil Hyde, who was a northern California and is one of the photographers of the Sierra Club. He and his wife came, and his boy. And they spent about a week on the island. They took all kinds of pictures, air and anything else. He gave me some nice color shots, 8 x 10's, which we put in an envelope in our report, which we finally got out. The report is still valid, its been used. There have been new things found, new species and so forth. But I got deeply involved because I used a couple of Cubans to describe the caves and I wanted to use our Institute of Culture which was the archaeological route to describe the history of the island. They had an anti-Cuban in the Institute who said that as long as that guy is there we're not going to work with you. So I had to take it on, so I took on the writing of history from Columbus to now. And I went to Washington, I was in Washington for some other purpose. I got into the archives. I got into all of the logs from the Coast Guard that had the lighthouse there. And I went into the Library of Congress on everything on Captain Kidd, then the Portuguese and the Dutch and all the others that were in this area. The island is like Tortuga in the sense that pirates used it for almost three centuries. It was not under any control. There were Indians when Columbus came, and they got wiped out. Because every pirate that came, they raided their crops and chased around and raped the women and killed anybody they could. They disappeared in a few years. The island raised good crops of all things in the early days. Way back they had squash and great big cassava, and all kinds of things. They had oranges they brought in from somewhere. So I wrote the history, it was actually 40 pages printed, as an appendix to this thing. And that was my involvement with it. Well, its made me kind of a Mr. Mona Island to some people since then. And I get calls from people going over there and they want to know what to do, what to see and all that. I've led a lot of trips with young people, as I say. We were supposed to go this Thanksgiving but we just had too many things to do. There are some fine people I'd like to go with but it doesn't work. I never thought of it as official until Tom Ellis talked to me one time and asked me about what I was doing. And among other things I mentioned this and he said well we never saw any evidence of your doing that. And I was said well it wasn't official. I was usually helping boy scouts or something like that. And he said well, gee, you're the only person I've ever heard of like this. He said well anything like that which has a conservation background to it, don't feel hesitant about using official time for it. It's an adjunct to your work and it makes you more acceptable to your clients and everything else. Well, this was Gus Pearson again. So that's the stand on that.

HKS: I was going to say you almost sound like in that particular case you were the environmentalist fighting the developers. You saw a higher and better use.

FLW: Me, I consider myself an environmentalist, but the word has been so blasphemized that I don't like to use it very much. Merely because on this forest from the very first plan almost 80 percent was never to be touched under the plans I made for it. Any one of the National Forests nationally, and about 75 percent is commercial forest land. I don't think it should be. That's one of our problems. I never countenanced doing any of cutting of timber except down in the lower areas, which was secondary forest and stuff. The plan that got shot down called for 20 percent of the forest to be used as timber. Now we're backing off to 1 percent, which is hardly enough to show anything.

HKS: Your rationale at that time was watershed protection?

FLW: We had a vanishing species, which was before the Act of Endangered Species, which I set aside 3,200 acres for in 1949. We had the recreation area, the Whitley Recreation Area, which was growing. I set aside 1,500 acres for that. Most of it was water. In the first place it was {steep 246} and the upper sites were not good timber types to begin with so I don't take a lot of credit for that. But where do you find other national forests, there are some I'm sure, where this kind of ratio exists. And its done by foresters, not by ecologists or greenies or anybody else.

HKS: It's not on the outline anywhere, but that's okay.

FLW: I wrote a letter into the Journal of Forestry on that subject and ended up by saying does it follow that I must abjectly pretend that monocle use is new? I didn't get any rises out of anybody.

HKS: Keith Arnold told me about an anecdote about you and the parrot trying to get to the people in Miami and so forth. Let's put that on the tape. How did you know the parrot was in danger?

FLW: When I came here there were 2,000 parrots by the wild counts of people. And they were plentiful, a lot of flocks.

HKS: And this is exotic and grows here in Puerto Rico?

FLW: Yes. Used to be all over the island, they say there were millions once. And it got shrunk back in 1917, they were in the forest and they were only on a little bit of mangrove near the forest. That closed out. They were on the forest only. We were cutting timbers for the war and we'd knock down a hollow tree sometimes with a nest of young in it. We knew that some of the guys were collecting young and selling them, but the parrots were plentiful and we didn't know how to stop them and we didn't do anything about it. And then in the 1950's I got to sensing that the parrots weren't very common any more, I didn't see many of them.

HKS: Are they an attractive bird?

FLW: Yes, emerald green with red and they've got blue under the wings. Not as pretty as many parrots but they are the only one we have under the American flag. I went to a friend of mine in the Senate here and I got them to set up enough money to put a man up there, and we made an inventory. Several of us went up. And we counted 27 birds. And we knew we had the whole flock. But the guys that used to steal parrots didn't believe us. No, over the hills there are a lot more. But there weren't, we had people everywhere. 27 birds. And it went on down to 13 before we turned it around. It was very tricky, it was a very complex mess of things. But that thing in Miami. We wanted some birds that we had checked, I believe, at Busch Gardens in Florida. And Larry Hill was the supervisor, took them on his lap on the plane in two cages, two birds. And when they got to Miami they got stopped by quarantine. And quarantine said they had to check these birds and so forth. Well, Larry couldn't stay. So he told them where they were supposed to go, Busch Gardens or something. And he came back. Well, Busch Gardens got one parrot. And we later brought it back here because they couldn't make the tests that they wanted. Then we found out what happened in the quarantine. In the quarantine they have ruling for fowl that you take 5 cc's of blood and you check them what's wrong with the darn thing. Well, the parrot didn't have more than about 10 cc's. And the guy read the rules, took the

5 cc's out of the two birds, and the next day another guy came through not knowing it had been done and did it again. And it killed one of them. And the people who did it--we got this story by all kinds of devious ways--the bird was sent to their Staten Island refrigerator, and we can't get it back. We couldn't get any information about it, we lost the bird. But the other we went and got back. And since then there has been a proposal to move some parrots to San Diego, or somewhere in the States to use, there's a place where they take care of parrots. And there has been a lot of public opposition aroused here. The Department of Natural Resources would not approve it. There's a second aviary now being built, its operational, in the middle of the island. The hope was that we could have two flocks. And that ones just starting so we haven't gotten very far. That story was a real tragedy.

HKS: The story that Keith told as I remember, is that you were shipping some pairs, maybe three pairs or some such thing to Maryland for the USDA for captive breeding and you couldn't land them because the State of Florida required indemnity, and Keith indemnified Florida, although he had no authority to do so. Did he remember that whole thing?

FLW: I think you're right, that it was to Patuxon, Maryland that they were going, that's the truth. I guess when Keith got into it, I remember now, that he's right on that. But it was in Florida where the darn thing happened. In spite of what Keith said, they had processed the bird to death, so we lost one of the there. Then, one alone in Patuxon was of no value so they brought it back. There have been a lot of remarkable things happen to parrots, most of which I wasn't directly concerned with. They saved a bird by replacing its wings one time. Those things are in the book.

HKS: What's the status of the parrot today?

FLW: There are about 35 flying, and they have about 75 in the aviary which they are trying to shuffle off to the other aviary as soon as they are sure its quarantined and so forth. We haven't been making releases of them. We still follow a nest. The lowest number nesting was three, and now we're up to six or seven nests a year. Its very slowly.

HKS: So habitat destruction is the issue, historically?

FLW: Yes. And why they dropped in the forest is unexplained. We argued for a long time about this. One of the issues was the timber cutting in the war time did them in. But we know, by measurements practically, that we touched 15 percent of their habitat and the rest was left in tact. Boy they were mostly seen, we weren't working. I don't think our timber cutting did them any good. We built a road across the forest. They live a long time so that the message of decline, like the pelican, comes long after the sin was committed. So its hard to say what it is. But the fact that they are rebuilding, with a lot of people in the forest, and they come and feed right close to some, they don't nest near them is a sign that we thing there is hope.

HKS: The introduction of exotic predators or competitors is not the issue as far as you know then. Some bird preempts their nest or something?

FLW: There was a thrasher that come in historic time up the Antilles, around here actually, that used to throw the young birds out of the nest and break the eggs and take over the nest itself. And this bird reduced nesting success below 25. And then Neil Snyder, who was one of the fish and wildlife people who worked with us--an absolute genius who makes a lot of mistakes and a lot of enemies but he's good--he concluded by studying that the parrots when they nest will not allow another parrot to come within a big circle around their nest, he figured the area. The thrashers had the same pattern, they fight off other thrashers, all at a certain distance. So he built a thrasher nest, an artificial one, by testing several things until he could get a thrasher to accept it within 12 hours, put it out and they were there. The nesting is so radiant there that its hard to find a good dry spot to nest, and the birds nest almost all year so they take it. So it puts a thrasher nest within the circle of the parrots fighting area, the thrasher prefers the thrasher nest to the parrot, the thrasher takes the thrasher nest, and the parrot goes into its nest, they are both satiated, and the thrasher then prevents other thrashers from bothering the parrot becomes it comes too close to its nest. And so he made watchdogs out of them. This took a long time, but they worked it out and they got it going. So nesting success is way up now. And we have a great deal of trouble with bringing the young out, we lost some.

There are {dot 428} flies that get in there and bite them and then they get worms that strangle them and do things. They hand these, you remember these sticky things you used to hang in houses to catch insects, well Esso produced some that are sonic or something and they line the holes with that to see if they could avoid--and they've gotten pretty good success with it. But the main thing they are doing now is producing equality in the aviary with the idea of releasing a lot of birds, maybe 50 at a time to see if that doesn't bring them out. They are in their second million of expenditures since 1968.

HKS: Are there other endangered species on the islands?

FLW: Yes, there's a snake, a boa. Nobody will put a cent up for it. There's another whippoorwill, and there are several plant species.

HKS: Puerto Rico is governed by the Rare and Endangered Species Act?

FLW: Yes, but it only affects federal expenditures. If you have a private farm you can shoot birds if you want. Well, there's a state law against shooting but you don't have to abide by it. You're not stuck with a $20,000 fine or anything. That's a big chapter. My only part in it really was very early. I recognized the shortage, I got some money out of the state, then we documented the shortage, and the Ed Cliff came down and I had no idea that great big man had a soft spot for birds. I still don't know, I know he's a jack mormon, but I didn't know anything more about him. And as we were leaving the forest I said, "you know that parrot is the only one under the American flag, and it's only on our forest, and if it dies the egg is on our face." And he said, "well, let me look into that when I get back to Washington." And he went to the Fish and Wildlife Service and got $5,000, he went to World Wildlife and got $5,000, and put the Forest Service's $5,000, and he gave us $15,000 to start to employ somebody. And that was the beginning of the program. And Fish and Wildlife got bigger on it and now is carrying, I think, 50 percent of the load. We've still got a lot of money in it. We saved it, I'm sure, the people that are working with said without us it would be gone. Whether we're going to get it on its feet, they talk about 250 nests, and we're using nests with boxes that we make, or hollowing out natural trees. This is a very . . .

Wadsworth, Tape 7, Side 2

HKS: Okay, these are exotics?

FLW: Yes, but these are exotic to Puerto Rico and there's a lot of producing honey. The parrot wants a big deep hole, and its a perfect spot for a beehive. And the bees, if they once get in, the parrots can't get them out. We have to freeze them out, its a lot of trouble getting rid of them, so they put a visor on it to keep the rain out and they put a door on it so they can close it when the parrots are through, and then just before the parrot season opens they reopen the thing and clean it out and that kind of thing.

HKS: That is expensive, I mean, when you think about the labor.

FLW: A lot of those they made out of 10" plastic sewer pipe, and they drive it into the tree and they put a ladder on one side made of wood that was bolted to the stuff, and then on the outside they use some kind of a stick 'em, and they put leaves and trash all over it so it looks natural. When they latch one to a tree the parrots will never take them. It's only when they have it inside the tree. And the parrots are very finicky, the female will only spend looking at a place before she'll go in it. We've had people in blinds from before light until after dark, cause they may not be seen, the parrots are so cryptic, and they sit there all day and they can't sleep. This is a tricky job. We brought in volunteers from the states, we've had a lot of Puerto Ricans doing it. Most people give up the first day. You think of sitting in a pup tent all day with your field glasses watching something wouldn't be too bad, but you just can't take it. This one afternoon there was a classic when one of the three birds were ready to fly the guy was watching them, they weren't green they were brown. And when the female left, the mother left, he went up there. He climbed the irons and went up there and found that a fork up above, a branch had broken off and it was all rotten and the rain had been going through, and that brown gunk from the rotten wood had gotten all over the parrots and they were gummed together, their feathers and all. And he knew they wouldn't be able to fly, so he cut off his pants leg and

plastered it around the thing to make it from getting worse and cleaned them up the best he could, then escaped. Well about three days later they came up again and they were so frightened, a two of them could fly--they had less brown on them--and two of them could fly and the third one fell. And he went and got it because they don't make any noise for three or four days, that's part of a protective strategy I guess. The parents have to know where they are to feed them or they fail. So he grabbed this and took it home, put it in his pack and it was night and raining and all the rest of it. When they got it there they tried to clean it out with all kinds of solvents and everything, and they couldn't get it clean. And so finally, Jim Wiley the guy who was in charge, said well cut off the primaries and secondaries and we'll go into the aviary and pick up the feathers that the other birds have lost and the feathers have a hollow shaft as you know, and they epoxied a complete set of primary and secondary feathers on this bird. And they had it back in its nest before light the next morning, and that day it flew. And they said he went through the trees -

HKS: It's makes you feel like god a little bit.

FLW: Yeah, it's hardly worth it for a bird, and that's why it costs so much.

HKS: Do you have any sense that experience you had with Cliff kept the Forest Service going on endangered species earlier, or was it a unique experience?

FLW: I don't know that that's true, but I don't think it was a light matter with him. He asks me about the parrots every time he saw me after that. There's a lot more to Cliff than I think I know. He was very effective because this was all federal to start with. I mean my start was with the senate here and I got the original inventory and got people excited that there was something wrong, but I couldn't sustain money out of the local government. So we brought the federal government in, and now the local government is providing some of the people once the thing was going. It shows promise. And the Puerto Ricans, as a group, are kind of unhappy that its the federal government saving something that's theirs. They'd rather that they be the ones saving it. In other words put the satchel inside the door and close it and we'll take care of it. But they don't have the talents and we've got very fine people in the Fish and Wildlife Service. Wives work 24 hours a day. One of the wives put in a time report for 24 hours a day for two solid weeks. And nothing happened until the computer up in Kansas City or somewhere said there's something wrong with this one. And she said that the book says if I'm on call within three hours I can count the time, and these parrots have to be fed every two hours day and night. She was eyedropping to the baby parrots in the aviary and she got paid. We've had wives that worked harder than husbands in this job.

Do you want to go onto the Canal Zone?

HKS: Sure.

FLW: I was called in by AID to look at a project they had for watershed protection in the Canal Zone about the late 70's I guess it was. And I was flown around to show the ground, I was taken out there and I met some good people in Panama City that knew a lot about it. And while I supported the project they were proposing, but they wanted a plan for the entire watershed, and they wanted to know how to occupy the people that were cultivating the land because the watershed was in bad shape. There was 100,000 people living in it. And they had to be distracted from cultivating it or the canal would be in trouble. And I pointed out that half the ships in the world go through there and why shouldn't it be a place to produce agriculture crops that could be manufactured to be cheese, citrus things, that could be sold. And I made a dream of how to do it and where to develop it, classify the land and that kind of stuff. But the thing that impressed me there was something else. I saw a report by somebody before me, Larson I think, in the mission point out some of the critical watershed things about the area. And I put it all together in a speech I made at the State Department in Washington. I titled it "Deforestation: Death to the Panama Canal." And that received a great deal of notoriety, not only in the U.S. but it was translated by Hecadon in Panama into Spanish, and I think led AID to spend more on the canal. Basically the problems were these. The canal is based on a lake, which is 90 feet above sea level, fresh water. And that lake is fed by eight watersheds that come out of the Cordillera. Seven of them are totally deforested, they are in grass. The eighth one is the largest, that's the Chageris, and it has very high rainfall, its something like 220,000 hectares, its a very big one. And at the time I was there encroachment was beginning. At the time I was there the power plants in both Colon and Panama City

had gone out and they had begged from the Panama Canal Zone the use of the power source that they had. It was a higher lake, {Allawhela 109}, which from the fall into that lake into {Gatoon 110} was the water power that was used for the Canal Zone. It wasn't designed to take care of Panama City or Colon, but they did it. I assume the army was worried about relations here and some stuff. That meant they had to run the thing 24 hours a day full speed to produce the power, and it meant that they lowered the water level in the upper lake throughout the wet season and dumped water in the Atlantic, which was the excess, to a degree that when the rain stopped Gatoon went down about a meter. And all the freighters that go through the canal are geared exactly to 36 feet, they load in many ports all kinds of junk carrying it through the canal, and they fill to that depth. In 1978 they had a dry year and the canal went down, they couldn't go through, and they piled up on both sides. Some of them went around the Horn, and the railroads in the U.S. offered special rates from New York to San Francisco to take cargo for Japan cheaper than waiting down there. When the lake came up, of course, they went through. Some of the off-loaded on the railroad, took the stuff across and then got through light. But it was a very bad sign for Panama. And Panama was about to get the canal from us, and I foresaw if the Chageris continues to get deforested, every dry season will be a low water on the lake because it increases the lack of uniformity of flow.

HKS: When you say deforestation, is it converted to agriculture or just deforested and abandoned?

FLW: Deforested, farmed, and then abandoned. They wear it out. They may even rotate, but little by little the whole thing goes. So what I pointed out was that the U.S. was going to blamed for this. And that one of the things we ought to do was to stop the deforestation. And AID then, after that, set up a project of forest guards paid by you and me, 90 of them, around this area. And I was sent back to train the guards. And I gave them a whole week on schooling on forestry and all kinds of things. And this was an interesting session because these were young people, they were living in the vicinity, they were innocent, many of them were Jamaican negroes left over from the canal building, they still live in Colon, a lot of them. They asked me a lot of good questions. They wanted to bear arms so they would be able to control invasion, and the Panamanian government wouldn't let them. And they wanted to know what they should do if the mayor of their district was telling people to move in and farm there or if they found him there with a shotgun, what were their rights. And so on Friday the head of the Forest Service was supposed to come and answer all these questions, but he never showed up. And on the way home 12 of these people were killed on a truck accident that turned off the road. But they did go and guard the place. And I've been told that, and now {Cone 158} is doing it in NGO, that its fairly stable. They've pretty much stopped that there. And the lake has not gone down, its been okay. But I proposed that we take three and half percent of the receipts, which is $350 million of the total we get every year from the ships going through, take three and half percent and build in the government of Panama a very strong agency with professional training and all, there was time to do it, so that when we pass it to them that will be the source of that agencies support and it will hurt Panama not at all, and they will continue to take care of the canal. Well I was shot down openly in Panama by the engineers who were there, who said you have no idea how badly we need this money just to keep these gaps open, and we've got the world's largest dredge working 24 hours, you know, all this kind of stuff. And when I was there I saw veterinaries for pets, tennis courts, girls scouts, a lot of things I like but you know if you want to save a watershed its important. And so there are guards on it now but I don't know all the status. I was in Panama just a few months ago on another thing. And what I didn't like was that NGO given the responsibility for patrolling and protecting a national park. I don't think that is the way to do it. I believe in privatizing, but these are the resources of all the people and I don't think the NGO will be backed by the government if the government hasn't got enough spunk to do it itself.

HKS: AID, and I understand it, officially must be invited by the home government. And so the Government of Panama invited AID down to what, to make the study that you made?

FLW: Yes.

HKS: And the instructions included the recommendations of policy?

FLW: Yes, yes, that's right. But it leaves my hands and goes through AID on route to the government, and very likely and purely diplomatic minds tamper some way, I don't know how. I do know that they hired all those guards and I went back and trained them, so it sounds like somebody listens. AID in Panama today,

the AID mission, is exactly what you would imagine. I went to one of their Christmas parties or something, and its just like France the week before the Bastille fell. These guys, well dressed, they have a couple of Panamanians I think as a token in their office that come and they are very friendly with them and all, a few words of Spanish, all discussion among the people is in English, and if you were Panamanian some of it is a little bit insulting. And the people are hardened to the point that they don't feel it. I don't think they mean it.

HKS: So these are first world people living in Panama on first world salaries, with first world luxuries.

FLW: Yes. AID missions everywhere are that way, you know. And I saw in Paraguay a pamphlet with the stamp of the State Department to attract secretarial from the U.S. And all the emphasis, they showed pictures of homes near the golf course, all the emphasis was on the cultural luxuries you enjoy, not a word about fraternization or the people or anything else. And you won't have to stay long, there will be a lot of other friends from your same area you know, and we have these social clubs and all this kind of stuff. More or less tainting your judgment away from sinking any roots in. These people, all of us have been working with AID and you see a lot of things wrong with AID, that's easy to change because it has up at the top a diplomatic base. We were told in Washington that our priorities, national, abroad, are diplomatic and military. And if there's any money left over be sure you have a shelf of projects to let us see. But that's the order, and you get just crumbs that fall on the table. That's virtually what they told us. We had a team that was looking into this thing, AID asked for it. Its grim in that sense. I don't think other governments, many of whom sometimes have poor people go abroad, are that callus to the feelings of other countries. I often ask myself on this job, suppose that country asked us in the way we're asking them to do something. What would happen with the guy on Central Avenue in West Chicago? So many things that were paternalistic about them.

HKS: Paternal mentality, like with British and India and the French.

FLW: Well I was taught in school we won every war we fought because we were right, and of course Viet Vietnam may change that or something. That is just what we didn't like about the Germans. I mean it was that same problem. The Canal Zone, its going to be very interesting to watch because the Panamanians I've talked with say they expect to be able to manage it much cheaper than we have. And I think they can because

HKS: Because of the lower salaries or more efficiency?

FLW: Both. I don't think efficiency is on their mind, I think they are stopping a lot of the services. But the Panamanians who are living in the Zone are Uncle Toms, and many of them are talking about leaving the country when the change takes place. They are not liked. They know where the pipelines are, they know where the wiring is, they know everything within the Zone in ways that without them they'd be lost, even the people in the U.S. don't know all those things. And so its going to be a critical thing. We relinquish some of the land about three or four years ago, and what's his name--the guy who's in Florida, was the power and he wanted to have a big demonstration of how much Panama loved the Canal Zone. And so he asked the Forest Department to plant a million trees, get all the school kids out there and plant a million trees in that new land they had. And in the nursery they had {cordi aliodori 266} it was all they had in quantity, its not the place for it but they planted it. I don't think any of them are left, but its that kind of a thing. Our people in the Canal Zone, many of them have been there all their lives, they have a kind of an attachment to it. They haven't accepted they are going to move away yet. Targras is an interesting place. And the Smithsonian Institution there has made a number of good studies of animals in it. I don't know what it's fate is going to be, I assume it will continue to borrow Cordillera Island. Its a set aside, and they took it and they got it pretty early. Interesting thing there is that Cordillera Island used to be part of the mainland, it was no canal on the lake. And when it was isolated the bird life has declined. And the most specialized forms have gone first. No people on the island, there's no pressure. The environment isn't good enough, got to have more range for the ones that are specialized. {Part of the 285 }, they leave. But the least specialized are staying. And they've been following it since 1906 or so, and the bird life and mammals and stuff. I don't know what the mammals have been doing. I think they were there.

HKS: Well, we've got time. You've already talked about FAO. I don't know if there's more you want to say.

FLW: Well, maybe some things. Let me see what lies ahead here. Maybe I ought to move ahead a little bit. The general part I'd say about FAO is a feeling that the U.S. should be a much stronger pillar under FAO than it is. I know all about the fact that our quota's the highest, and the fact that we are now three year's behind or something. And its kind of mortifying because I don't think that's criticism of what they are doing. I'm afraid it was just opportunism and the economists of the government. They just figure they can't take back, the people won't care, we won't lose any votes by not having {paper rustling 309}, you know. And yet in earlier years we criticized viciously the Russians for not paying their share. I think we never had fielded a team of professional people in FAO proportionate to our contribution. And I think the way the books read we're entitled to do that if we wish. I assume we could tip the balance of the leadership continuously if we wanted to. That's not really so much what I mean. I find on all FAO teams that I've visit that a U.S. person is a rarity to the European people.

HKS: Why would that be?

FLW: Well, one of the things is that Europeans are pushed out because there are less jobs at home, there's no line of retreat like there is for Forest Service people to come back to. They go out and that their career. They have wives or children on the job and they bounce from one to the next, and FAO pays salaries like ours. They have retirement and things like that like ours, which is always better in those countries. Not so much better than in ours. I think people in those countries are informed about the rest of the world than we are. I think we are pretty provincial people and we figure that moving out is when you can't do it at home rather than an equal opportunity or something. I think the glamour of doing it is pretty much confined to younger people. And that's not a very firm basis on to which to establish a whole new career. The glamour wears off. Travel all your life and get sick of planes. I do find in FAO and in the other bilaterals, people have more durability though and tend to be there longer. They don't tend to go home. They tend maybe to go somewhere else. I was with a German just recently, a very impressive person, a young man, down in southern Mexico, knows the language perfectly well, he's well met, he's mixed in well. Obviously this is his work, he's married to a Paraguayan, so he stayed in Latin America. AID mission stays generally about two years and you may sign over, of course, if they are willing. The Peace Corp, unfortunately, well let me take that one separately. FAO is or should be the world leader and I think in forestry we have, despite all our provincialism and the guys who don't see anything abroad, I think we have more resources than any other forest department. And I think its our profession that's at stake in this. Forestry is backed to the wall by greenies or by poverty or by politics, whatever it is. And I think we are potentially a real pillar behind the profession worldwide. And we don't take that. I don't believe that the top man in forestry division now, who I think has a lot to say about this, is anti-U.S. at all. On the contrary, I think he's a very good man. We've had some that were anti-U.S. And I suspect that if we put people out there and they did a good job that we would be accepted with much problem in FAO. In many ways I think its a better job than AID, because AID is short project oriented a lot. And so you don't know where you're going next. To a greater degree I think than being just cut off and sent home is always a possibility. I think if you are capable and willing and interested in foreign service I would direct people to get on the list of FAO. Now FAO, like others, doesn't recognize the gap between recent graduates and experts. They know there is a gap, they want this guy and he can't get here without something less than that. Well our government does not do what many European governments do, and they have what they call junior experts. Junior experts are young recent graduates who voluntarily want to go out, they are paid a little better than Peace Corps, but they always go where there actually is an expert or so called expert. And they serve with him and do a lot of his legwork and stuff. And after about two assignments they become an associate expert, and then an expert. Well, those experts must be better than we have, because we don't go through that. As a junior expert, I'm sure that some of those men I've met are terribly impatient they are dealing with. They wouldn't do it this way, they'd do it some other way. Well you know its a learning process. And when they finally graduate from that career or ladder, they must be hardened to a lot of the things you shouldn't do. They ought to be jumping in the pit to go and do something practical. We have two slots like that. Congress said they might try it, and there are two slots and I think they are vacant. One is in Asia and the other in somewhere else, Latin America maybe. I talked to Har Charwick, he understands it, and I think he has the explanation which I'm not sure I have, as to why its so difficult to sell this. I suppose its looked upon as an add on, extra expense for this. Our projects come and go and can you turn on juniors that way or not. And how do you recruit for a couple of years or something like this. Well, I'd much rather take that kind of assignment than I would Peace Corps.

HKS: The foreign service, though, does this. One of my associates at the Forest History Society, her daughter is married to a U.S. Foreign Service person. They had a two year stint in Poland, they came back to the states for a year, now they are in Argentina. Their whole life is going to be mostly overseas in Embassies. And yet they have high quality people, they don't have high divorce rates. I mean it can be done.

FLW: I'm sure it can be done because I think some very small countries are doing it, Norway and Belgium and places like that. The fact that you say it's being done by another agency in the government within the State Department, I guess, makes it all the more bizarre it seems to me that maybe forestry is at fault about selling it. Maybe the Peace Corp opposes it. I don't know.

HKS: It seems to me, I'm not trying to simplify it, but expectations are the issue. In the Peace Corp your expectation is two years I'll be back home, back in middle class America going on with my life. But Foreign Service people signing up for a lifetime of every other session is overseas somewhere. Living well overseas, nonetheless, but still.

FLW: I don't think we lack people to do that, I think maybe we don't know who they are, they are not sure they would. Because a lot of Peace Corp people are glad to get back and not stay. But a percentage would stay. If there's a way, maybe the Foreign Service has been able to identify such people.

HKS: They have children, wives and children.

FLW: I understand, that's the way the Europeans do. Its their life, they are not just a sojourner.

HKS: Of course its expensive, you have to move a family.

FLW: Yes, that's right. Well I don't know

Wadsworth, Tape 8, Side 1, December 1992

FLW: I think goes right along. I feel the U.S. ought to be much more active in FAO. I don't think I know all the trials and tribulations and why we're where we are. Because people who are intelligent see it {hallowized 007} somehow, but I think bilateral is basically selfish. In the face of multilateral, you see multilateral is the beginning of joining forces. I mean the fact that we have to lie down with people we don't like very well has got to be overcome.

IUFRO, I had very little to say on. I have never been very active in IUFRO. I went to the Montreal meeting and presented a statement there. IUFRO, as you know, is pretty much a European thing until George Jensen brought it to Gainesville for a meeting. In FTS news I covered it somewhat.

HKS: Is this in part because IUFRO has tended to be northern hemispheric first world?

FLW: Yes, and in the meeting I put in a plug for IUFRO in one of our Latin American Forestry Commission meetings and was talked down. {Kot Sole 022} from Argentina said that IUFRO has never condescended to use the Spanish language and we're going to have our own for Latin America and he got a resolution for a research organization for Latin America. And he still beating the drums for that, although IUFRO now has got Spanish. IUFRO has very few people in Latin America who are active in Solasori and Costa Rica is one, Argentina I think, and there was one in Brazil. I don't know. But its reflection of the fact that the sophistication of research is so different where IUFRO's headquarters are and where we are. And its just like leading a baby by the hand, you know. Forming, as IUFRO does, forming international working groups in every subject contemplates travel capabilities that don't exist. You can't bring people to a meeting so how do you reform? We have to face the fact that writing letters is not a very satisfactory substitute. So many people have a lot of things in their heads and they don't write letters, I don't write letters very much. My solution to it was if we form a Latin American IUFRO let's use the IUFRO outline for our working groups so that if there ever were a marriage possible that we're all in the same system.

HKS: Is AMICA any more active in Latin America than IUFRO?

FLW: I doubt it but I don't know, I just don't know. I think IUFRO's trying. I know that Buckman was sincere in wanting to be worldly.

HKS: He asked me if I'd stay on another term as chairman of the forestry history group, because he said if you don't the Europeans will take it over and it'll be right back in Europe again.

FLW: You're probably right. USAID has been bad mouthed from an awful lot of people, and of course its our chosen instrument today. It's really the biggest source of technical assistance in our field that we have. I guess you're aware of the fact that the U.S.' technical assistance compared to our GMP is number nineteen in the world. Belgium is number one. Canada is way ahead of us, Japan is ahead of us, Germany is, Norway. It doesn't mean that in the absolute, its 9 billion or something, its more than the others. Not much. Japan is 6 billion or something. It's a remarkable thing when you think about it. We talk of ourselves as being philanthropic and try to help the Somalians and, you know, working health organizations, everybody all over the world which isn't counted in this. We really are not giving like some of those other countries. I was in Trinidad a couple of months ago and there was a very fine woman there from Holland, and she had been down to Cosol and was visiting. She was doing environmental work. And there was a man there from {Guagaminion 69}, that's their forestry school. And we got to talking and I knew that they had an excellent record of contribution lists. I said how does it happen that your country, which is relatively small, does so well abroad. You have an excellent school that's teaching tropical agriculture and forestry, the men that I've met have gone out are all good, I read your journal and find good things in it that I can copy. And her answer stopped me, she said "we just don't have many problems at home." I'm not sure that's it, but that was the way she changed the subject. I don't know. But I think AID is subject to powers that we know nothing about, I mean diplomatic, military, business. You see in airports way off in the jungle a military plane from the U.S. and have no idea what its there for. You realize the cost per hour of that plane sitting there, its more than we can put in a project for two years. The State Department must have so much voltage that its kind of a title fantasy to assume that something drastic can be done to improve it some way. I'm not saying they should increase the gross amount, but so much of what AID is doing is to me questionable. Maybe I should go to Washington and be part of it more, I don't know. We got a message two days from the Mt. Hood Forest, maybe I told you about it, they have a $98,000 project requested by the regional forester in Portland to assist 14 countries in tree planting, the Philippines, Indonesia, Sri Lanka, India, Guatemala, Honduras, Nicaragua, Trinidad. And this is the Mt. Hood National Forest. And the Mt. Hood has a guy in charge of timber management, Tom somebody, who is going to ramrod this thing. He's the manager. And one of his flunkies is looking all over the northwest now for returning Peace Corp people to get on the team to send to these countries. They claim that the Retree Foundation, which is an NGO, has contacts in these countries and they can arrange for the trees and the school children who are going to do it. And these guys roar in there and show them how to plant, that's the project. Well, the junior person sent us a DG message, said he didn't know anything about the tropics, was there anything we could send him that would kind of help him in this job. Well, he sounded like a good guy you know. But a couple of us were concerned about this. We tried to get Dave Thorow, he's on the board, and we tried to get John Gordan, couldn't reach him, to find out about Retree Foundation because we knew nothing about it. Whether they've been going a long time, they've got some guy who is a Johnny Appleseed going around planting trees everywhere, sounds like a good person. But it could be very, very shallow, and not a word about acceptance of the countries. Can you imagine the Russians coming in and taking some kids from Omaha out to plant the cornfields in prickly ash or something? I'm using this, not primarily because I'm critical, but it's symptomatic of many things.

HKS: How did Mt. Hood Forest get that invitation? Through a Forest Service Link or AID directly?

FLW: We think that maybe AREEA Foundation is behind it. We got hold of a project that signed by the timber management guy, but we think the real foundation boosts the Forest Service to request us. And the regional forester has enough voltage so it went right through. He's not guilty, I'm not blaming anybody, all I'm saying is this is real all lose cannon stuff.

HKS: I don't know if you can generalize, but from your observation is AID driven first by diplomacy and second by need. In other words, local government invites officially, and the local government may have hidden agendas just to get money. My knowledge of AID is very modest.

FLW: AID is not of the military department, but I'm sure.

HKS: No, its in the State Department, so its driven by diplomacy.

FLW: Yes, and I think the State Department has a higher level over it. And what gets to AID is after the State Department has done on a {siv 144} job on whatever options there really are, and its money which we think is a lot is pushed out, some to the Forest Service now, and the money we're talking about at this moment is already come to the Forest Service. AID is not blaming us, they've given us free hand and this is one we approved in Washington. I believe AID's missions are made up of second class people who don't really value very highly the opinions of the country, in which they feel they know better what these poor guys need. What you're saying is that we have to be requested by the country, which is the way the book reads. Well we goose them, we say we think we can get this would you like it, a road that goes there or something? And the country, of course, is biased by that to accept rather than not. There may be very few people in the country bitter about it, I mean they figure this is better than nothing. I don't think we really follow the apparent rule which is to give ascendancy of the country. We certainly don't lie back and wait for them to ask. I'm sure we're the aggressor in this in requesting things. Bruce Bail, who was working with us purely on AID budget, traveled all around and he knows all the people in the missions, and he's a much better source for this kind of information than I am. But he's cynical. That's his job, he said they have no foresters, I have to straighten out every time.

HKS: This was self serving on our part. We wanted AID to give us some money to interview returnees from missions and to use these interviews as a training tool for the next generation going out. Well, shall we explore that a little bit, they wouldn't return our phone calls, they wouldn't answer our letters. Finally we talked to somebody on the phone who said you can't do history unless the host government requests the history. And then I talked to AID returnee and he was saying that they were debriefed. AID had a contract with a university in Boston, I'm not sure which one, that would debrief a person like yourself, the expert that comes back. Such a hot potato because the debriefing was very critical of the host government because of corruption or incompetence or the diplomacy getting away, or something rather, that AID stopped doing this. I don't know if any of this is true. If its true it means that there is a very significant archive of oral histories somewhere in Boston or in the State Department that would be very useful to John Larmon and others who want to find out what's going on in these countries. So you have any, does any of this sound like a fairy tale to you?

FLW: It sounds like it could be. I would assume that somebody Carl Gallegos, who's in the Forestry Support Group of AID--a forester and a very good one with a background in Argentina from the University of Tennessee--would smoke it out and find out, and maybe find out what access there was to that kind of thing. He would be a person to talk to probably personally. I can talk to him over the phone. I have a phone number for him at the office.

HKS: We just get so many inquiries about tropical forestry and international forestry and we know that information is there but AID is really like the CIA, they really have the shutters down.

FLW: Well this fellow is a forester and would certainly on your face be a square shooter, whether over the phone he'd wonder whether to get involved.

HKS: He's in Washington, DC.

FLW: Yes, he's part of the Forestry Support Group.

HKS: He's sitting over in international forestry or is he over at the State Department?

FLW: State Department, he's over at AID. He might tell you enough to make you change your view as to how much you want to see it or give you more characters as to what it might have been like. He was Peace Corp.

HKS: We would that it existed, and we would want to know that it was available for scholarly purposes. Wouldn't be useful for us to examine, but is this sort of gray literature stuff or what?

FLW: I bet they stopped {mumble, mumble 231}, just guessing. If the reason they stopped it is because it was confidential stuff or the kind thing that was maybe not what they wanted, I don't know. How long ago do you think it was stopped, quite a while?

HKS: I couldn't get a sense of that, of how long ago it had been, if they debrief everyone or had a sampling.

FLW: I wondered if it would be all the Peace Corp people. I know that whenever I went into a country for AID I was expected to sit down with the agricultural attache when I got there and talk through what I was going to do, and hear from him any words of wisdom, and at the end report to him. And I found that those guys were so shallow that they spent the final session "well what's it like out there?" It was disheartening, that was in Panama. So I don't know.

HKS: Well with the turnover in AID personnel, our assumption was that these interviews would be good training documents for the next generation.

FLW: Let me see if I can talk, I mean I could talk to Gallegos and find out over the phone yes or no, he's aware of it or not aware of it, if it happened. I very likely couldn't get the information that you most need which is what to do about it, can you use it. And if its not recent maybe its lost some of its value.

HKS: Not historically. The old stuff is the best stuff to us you see.

FLW: Well, I realize that, but I was thinking of being guidance for future policies and stuff. I don't think I've said much about AID. I have no hesitation to go on assignment for AID if it looks like, with time I've become selective because there were too many. If it makes sense to me, I mean there's always an excuse not to go, you don't have to go, but if it makes sense to me. I'm sure that a lot of the people that they are willing to send are no good at all. And so you kind of feel, well, its your country why not do something. This last one was an environmental impact statement on three national forests in Panama. They didn't have an environmental impact statement they had to have it. And so we spent a few weeks down there, Henry Shenkle and I. I think it was ill-fated, but it had to be done. I don't feel badly about it.

ISTF is today I think my most enjoyable assignment, and I've even contemplated were I even to retire could I retain a chance to sneak into the office once every three months and get together. The places where the newsletter can be generated are few. You've got to access to a whole lot of stuff coming in. Warren Dulan sends me probably half of what I get. The other half comes out of our library or from our mail, I'm getting some directly. Its got to have a rich source worldly of what's going on, and these changes like the CGIAR research program that come through letters from friends often keep you up because "there was a meeting last week and this is what we decided," hasn't yet been reported and if you want to have something that's fairly.

HKS: Forestry abstracts is not adequate, it doesn't cover the tropics enough that you can just cannibalize that, or is that too dated by the time you find out about it?

FLW: It's dated. What I do, the journals is pretty thorough here and the newsletters--I get probably twenty or thirty of them, and I go through every journal, the librarian sends me the contents of all the journals as they come in. And I go through every one of them looking for every article and I request articles that interest me, they give me the journal, I look at it and decide whether to use it or not, and I end up with quite a stack of them. And what I do is just use the abstract, if there is a good abstract, or pick out at able in it that's interesting. The last issue I showed the new forestation in the Amazon by states, it happened in 1978 to 1989 or something. You pick up that kind of stuff in places, you have to be careful what it looks like and if its

reliable. But its a job of selectivity that is very subjective, its very personal. People send me things that I won't use, sometimes I get announcement of meetings that come too late has we have a small amount of lead time. And sometimes I get stuff, I got something for a meeting that's coming off in St. Paul or somewhere and I don't feel like I should put it in there, I don't know I just sort of feel who's going to St. Paul even though its a subject that's global of some kind, maybe its on satellite imagery of something. Those guys want all the publicity they can get. I look for speeches and for key statements that have been made by people, some of the stuff out of Rio I copy, Howard Iner went there and he got some more stuff. So its a way of keeping ones up to date and the word I get from the meetings we have had, I haven't gone to many of them, the one in Richmond was that the technical content, its not a newsletter in the conventional sense, it has a lot of technical content too, is desirable and wanted. And so I've been harassing every time I can, people tell me what's wrong. I don't know what to use more of or better. I don't get much back so I just keep on going. We're in the thirteenth volume now, there's thirteen years. And it was begun by Tom Gill, and then there was a hiatus when he died, 15 years or so. Without the support of Doolittle and Richard Fox who's coming here next week, and Howard Iner and Shoafmeyer and some other people, and Dickerman, Gordan Fox at the outset, it would never have happened. The Forest Service is putting about $5,000 in this and my salary. I understand that it has blessing all the way up and all the way down. It's the kind of thing that makes a policy decision because it is supporting a private group here. Lugo thinks we ought to get more credit, and I have one little trouble with people in Washington and that is I try to make it as un-American as I can, that's probably why they call me a communist. I feel that we'll get people from all over the world if they don't think its a gringo journal, particularly the French, British, Germans. Washington is so impressed by something Congress does or what the President says that they are apt to use certain part of the front page for something that to me is absolutely trite. When I carefully picked out something in middle Africa or somewhere that I wanted to feature, and I've complained about this but it doesn't work very well. The thing is mostly foreign stuff. I will once and awhile write an editorial. In theory there should be an editorial every time, and we had Charlie Larson and Steve Preston on the editorial board at one time, and I was hoping to get Ed Torozolo and never did. And I don't write an editorial unless I'm very angry about something, and it isn't very often that I feel that way. I must have written ten of them. Issue after issue I'll go without one. When the editorials are read I get response from them. It's makes us known, no question about that. Caribbean Forester, when we had the journal, made us much better men than we were. So I think ISTF is something one should be supported, the SAF is not supporting it very well. Not because they don't want to but they are kind of broke, too. We are using the building. They printed this through their people but we pay for it. There's been continuous questions as to whether it ought not go to monthly, because I had too much copy, or whether it should be expanded into a journal. I'm a little leery of the journal idea because there are {speaking too low 421}, you get so many different people's ideas as to what a journal should be like. The scientist quoting in one extreme and the practical people put them together, and your audience--I've got people in that audience who wear hard hats and others who are executives or environmentalist--you have to straddle all that to keep them in there. We have honorary vice presidents in every country practically. There's 2,000 on the mailing list, its reaching all the right people. We got a letter from Jeff Burley just last week from Oxford, he went to school there, commenting that page 4 and page 9 showing the same score, he was tweaking the beak of the eagle because he said that you say over here the guy who was leaving the {ecraft ? 440} says there were too few scientist in agroforestry, then over here AID's Forest Service Roster has 459 with experts. He must of had fun writing that letter.

HKS: Well the dues that we pay support the manufacturer of the document, the printing costs and distribution costs?

FLW: That's right. Well Little got some money out of a couple of foundations, got some from World Wildlife one time, and he got some from the Timber Foundation.

World Bank, I have little to say about that. My contacts, I've worked for them once in Mexico.

HKS: Intellectually, in terms of what goes on the ground, its different from AID in that it deals with bigger projects?

FLW: Well the World Bank is multilateral, its like FAO. The U.S. is not its sole source, its the biggest source and I think we kind of manhandle it some. I mean the reaction against the world bank and the environment,

a lot of the U.S. saying well our money is ain't going to go for this and the World Bank has pulled in its horns on some of these things. I think the management, they are responsible kind of like the United Nations or they are getting like it. They are not a U.S. bank alone. And they are a bunch of economist who apparently are given, I don't know--an international monetary fund or somewhere, where they are given permission to make what they call soft loans, which means virtually you don't have to pay it back or no interest or something, and of course it means they are the big source of money to a lot of the countries for a dam project or a big highway. I think they have rightfully been accused of being quite . . .

Wadsworth, Tape 8, Side 2

FLW: And the environment impacts anything they do, like these big dams in the Amazon, financing coal mines and steel mills and everything are fierce. I never do hear though their defense very much of what they've done. All of these things have a very high positive value in terms of producing something that's needed. And you kind of wonder whether the answer is to just stop producing, and things get better all the time. The population is requiring more of the things, more steel, more water power, more whatever else you have. I think the World Bank may have coasted too long on past balance of values and stuff. I really wonder if we haven't thrown the baby with the bath sometimes with just stopping cold. You know the environmental people want the old World Bank money to be spent for this kind of thing. They even ruled out the TFAP, Tropical Forestry Agriculture Plan. The environmentalists were so mad with for being timber oriented that they tried to get the whole Bank to stop spending money on any project with the TFAP, and the TFAP's have been passed foreign legislatures, that's what they wanted. They made them {goost 20} what they want, they accepted it. And how can we turn our backs on that? I don't understand that. I mentioned Bob Goodman, he's in the World Bank, he's a very fine guy. One of the most intense environmentalist I know, and very sharp. He's done a lot of writing. Its good stuff. And he's written on sustainability, what is our responsibility for the future? And he takes it through various dimensions. He tries to analyze how their wants will be different from ours, and that isn't necessarily providing what we want for them, its providing maybe something they want. And that's a moving target, in timber of course its important because in the future I'm sure the balance between mahogany and other woods is going to change. There will be a time we can't live with mahogany only, we've got to have the other woods so they use them. And who knows but what they'll become more popular and balance with mahogany may be subordinate to be adequate, you know. Anyway, that's the kind of thing.

HKS: The book that I read on a World Bank project in India, it was a very critical book, and the fundamental criticism was that the World Bank is totally obsessed with economics and there is no one there who can understand indigenous peoples. And they put a project in, and tribals as they are called in India, are ignored because the government of India. This was the book was saying, I don't have any insights. Does that sound like it could be a true story?

FLW: Yes, I think so. As I say I think its because the bank is going on with business as usual, or has. That Indian I think got stopped, that was one of the big scandals, and I think it slowed up. I think the Bank considers these tribals as externals to their operation. As you say they are financially oriented, and if its bankable and the country wants it, presuming that top people did. Most of the things that banks want to do is help the rich become richer, and not the poor. I mean when you think about it. Its a very hard thing to make the poor richer. I think from banker's view its probably impossible.

HKS: The assumption was, as best I can remember, that the tribals in India would welcome the chance to work for wages. And this was going to benefit them because they could buy the things that they theoretically all wanted to buy. It turned out, according to the book, that they didn't have that great an interest in working for wages, they are semi-nomadic I guess, and they moved away from the road and buildings because they didn't want to live near the roads. All the assumptions the bank made, in terms of the tribals response according to the author, were in error. That any anthropologist or any social scientist could have figured that out.

FLW: Well, I've quoted a lot of things from bank people in the last three or four issues of {60} News, and they make a very strong statement I would say openly saying their turning around. One of the last ones was about the degree to which banks are now calling upon NGOs for council. I don't know they would have

prevented this kind of thing. It sounds as though they've heard the music and they are doing some shifting. I think they withdrew from a big road project in Brazil where Japan was going to build a road all the way to the Pacific through the Brazilian Amazon. I don't know whether the Japanese have pulled out yet or not. But I think the Bank did. I remember two people who were in the Bank and they were foresters, and my suspicion is that they were there as a token. The world is getting environmental so we better have a few people like that around, whether its near the front of the table I doubt it. I think the hammering that's gone at the Bank has been effective, I think some of that report you read is very likely exaggerated. But it's like calling the Brazilians hamburgers, you know, a foolish stunt. It makes good reading. I'm sure if you and I were to talk to bunch of AID people we would hear an explanation and probably a sign of some of shifting with them. They still are a bank, so they are big economically oriented as almost what I would expect of them. I hope they {laughing 85}, some banks that haven't been you know. I've criticized at various times the idea that banks rule us, that just because you've got a big bank somewhere they dictate whether you build that road or you build that dam or you plant all those trees. It seems to me its the wrong directive, its the wrong source of the decision to the bank. Going back to the compound interest thing, I mean if it doesn't pay out next year we're not interested. Well, the world is never going to pay out, its going to keep on going. And it just seems like that must be a real limitation. There's a fellow in the Bank, a forester--you probably know him, a Yale graduate. He wanted the Bank to support a lot of tree planting. He's gone overboard, I think, on planting, but that's a minor sin. But he was hammering with the Bank and he got a lot of money, and he wrote some very good articles in which he pointed out to the Bank that under some circumstances forestry is the most bankable of the prospects there are for developing marginal lands and that, and that the interest rates that should be applied, there's a good logic for their not being as high as many other things. And of course his basis is that the externals are worth more than any of us believe, as the watershed protection and other values of forest that are not the direct sense. He's inside the Bank. This is a good sign. Again, he married the daughter of the former president of the Bank, the guy who was Secretary of Defense, yeah, McNamara's daughter is his wife, and so he got into the Bank pretty high up right to start. He's a smart guy. He was behind TFAP when the World Resources group and the World Bank and FAO all three supported the upper forest action plan. And the World Resources Institutes, criticized it right and left, and I think FAO is still behind it. I don't know about the World Bank.

HKS: There was a report attributed to the Bank, maybe 15 years ago--maybe a little bit longer, that I heard cited a lot and not necessarily in a negative sense. People weren't saying it was a bad idea, but in a sense, the sustained yield of forests was not necessarily good policy for the third world. And it was interpreted as some exploitation is necessary to get capital investment. And so on and so forth to go into a third world country and put them on sustained yield may be harmful to that country's long term interest. Do you recall a statement like that?

FLW: I don't recall it, but it may well have happened. Because I think what they are driving at there is that a country's ultimate forest acreage is not necessarily what it has today, or it wasn't in the U.S. That if you bottle it all up and sustain it you're prohibiting other use of the lands, some of which are legitimate and useful. There is an awful lot of land in the tropics that would be useful in agriculture, including the Amazon, without our ever stopping it. So I'm not sure its all wrong. If they are trying to sustain all that is there now I think you are going too far in many places. My first reaction is what land has to stay in forest, and the reason is not timber its water. Once you've got that down then you sustain that by God. It may mean in the meantime that you cut the heck out of some other areas that are going out anyway. That's what Malaysia has been doing, Borneo. They've been criticized for it because they didn't sustain it all. When they get back to the lands in the permanent forest estate there are on a basis where they can sustain it, not at the rate when they were liquidating. Liquidating is over a lot, you know, cutting 14 billion cubic meters a year, and now its dropped down to about 9 when they fall back on that permanent estate. Well that 9 had better be sustainable because a lot of people depending on crops, supply and resources and stuff. I think there's a big environmental community that would like to destroy sustained yield as an impossibility, the people have been saying this. If they really throw something at it they do. I think they are embarrassed because we invented it.

HKS: An economist at the University of Washington, a forest economist--and I'm sure others would agree with him, that sustained yield is a biological concept and has no place in forest management because it ignores demands. You make demand inelastic and then that is not a rational management decision.

FLW: The thing I would argue there is that sustained yield for me is sustained per decade, not per year. That is the way I planned the forest, you get about the same amount every decade. You can go up and down year to year with demand, whatever, goes on with depression and still be within the ballpark. I think its like the purist who insists on primary forestry un-urinated on, its got to be absolutely pure. That ain't going to survive. And it seems to me that beating sustainability yield when you're driving into a corner like that you've got to have exactly tho the nearest glassful the same timber every year was never in the concept of the originators. I would think. Matthews taught us that at the companies, if he did a good sale you sell the heck out of this year or easier next year. That kind of year. There was realism there I thought. And yet how can we abandon the idea of retaining a certain amount of continuity in production. The cost of the processing facilities, let alone a paper mill. The paper mill just can't rely on farm wood because it isn't consistent. So I could run uniform {185} all the time, that kind of stuff, they have to have some of their own. A couple of the editorials I wrote in ISTF Newsworld were refuting the challenge of sustainability that was in forestry, and we had a responsibility to it.

HKS: To me an interesting example of forestry dogma or doctrine that I saw in Montreal at the IUFRO conference a couple of years ago where we were planning the very recent Berlin Centennial of IUFRO and the theme of IUFRO there was to be the Centennial of Sustained Yield. Sustained yield was sort of the theme of Berlin. And an Australian in Montreal kept arguing a lot of countries are trying to increase their yield, and he thought that we should celebrate the fact that a lot of countries produce more than they used to, that they didn't level off and hold, that the notion of sustained yield goes back to the 19th century where we worried about cutting too much. And the German who was proposing sustained yield didn't even understand the argument was, although is English was good. The notion was so far out of what he had been doing all his life.

FLW: I was told by OSARA from Finland that they had a national holiday in Finland when the average yield passed 1.3 meters per hectare per year. It had been 1.2 and it went up to 1.3 as a result as a better silviculture or something, and when they proved it they had a one day holiday. Of course that was their lifeblood. But in the 1960 World Forestry Congress in Seattle, Hayford Streisen who was Swede professor got up and argued for sustained yield in a keynote paper, the first day. And Egon Glesinger was chairing, moderating the session. And he said well don't you think with the growing population throughout the world that maybe we ought to be shooting for more than sustained yield, increased yield. And Streisen said just as long as the increase is sustained.

HKS: Well Glesinger wrote the book Nazis in the Woodpile during the war. I don't know what else he did, I mean that's the only thing I now of him.

FLW: He wrote an earlier one, The Coming Age of Wood. He was a very flowery guy. He was a Czech I think, and he hung around FAO for a heck of a long time. He was one that our people in Washington didn't trust very much.

HKS: You want to stop here.

FLW: We'll go on to ITO then?

Wadsworth, Tape 9, Side 1, December 1992

HKS: Let's start this morning with two items that haven't been on the outline, but we added them. The Peace Corps.

FLW: The Peace Corps. In the early days of the Peace Corps we were called in by the Peace Corps and Puerto Rico became a jumping off place for people going to really all over the world, but mostly Latin America. The Peace Corps set up two camps, two permanent camps on one of the state forests. We had a place in the program of presentations. However, the Peace Corps began under some pure generalists, you remember the family of Kennedys was involved. And they didn't want specialist to begin with. They wanted people who go out and enter the trees and do all kinds of things abroad, just to be doing good. Our lower

was specialized to a point that slowly we were kind of usurped out of that position. Puerto Rico's two Peace Corps camps were kind of closed down, and now I think all the training is done somewhere else. But the shift has been from generalist to specialist over time, and the value of a specialist has been recognized more. My son went into the Peace Corps in Chile as a forester. He had Spanish and he, I think, had some problems with it but I think overall he felt it was a good experience. We, as parents, got the Peace Corps Journal that was issued to kind of give success stories of Peace Corps volunteers, and I found it kind of interesting and some of it amusing. One girl was so proud of having put a Shakespearean play on in French West Africa and I think she must be quite a woman, and she wanted to stay with the Peace Corps. And then I got to know quite a few people who made good as the Peace Corps, you might say, and wondered what then, and had troubles with coming back to the fast food world. They had some language proficiency, we hired some of them. It looked to me like a tremendously wasted resource, referring to those few who wanted to stay and do work abroad. Most of them are still single and some of them had a degree, of course. I think our society in the U.S. has been extremely wasteful in looking upon that as a brief period with no posterior value except as it may have made them a little more worldly in their outlook and so forth. I think its fair to say that curriculum vitae in the Forest Service and many other places may carry the fact that a person was a Peace Corps in Surinam or somewhere, but I don't think it counts for much. I never hear Peace Corps people in cocktail parties talking about their Peace Corps experience, unless its with another Peace Corps person, or they get something in common to talk about. All of it looking like I was a kid then I didn't know any better and I went out and it was pretty hard going and so forth. Plus the fact that in Chile, where I went a couple of times and got to know Peace Corps situations and some Forest Service people over there, much of it was very poorly administered by people that were immature. I know in Chile they had a group which got a record player and they brought in operas and all kinds of stuff and they sat around weekends listening to music, as an enclave you know, nothing to do with Chile. And it was their breath of fresh air after whatever they had to do during the week. One or two groups went through here with footballs, they were going to introduce football wherever they went, our football. I can excuse that because that was their world and they are proud of it and so forth. I find myself a very strong advocate of young people who are interested in this problem of deforestation, maybe they are biologist or ecologist who are still in school or getting out of school, to seriously consider a stint in the Peace Corps, because what I say to them is that if they didn't like it they learned a lot, if they do like it opens up a tremendous opportunity if they wish to follow it. They won't make a whole lot of money but they will have their own freedom and can do a lot of things. One thing I think Peace Corps hasn't done is to force people to do what Peace Corps wanted them to do. I think many of them when they get way there somewhere, they are on their own resources and they develop their own connections and program and so forth. Sure they have to report once and a while, but I feel it is a breeding ground for maturity. I think as you said yesterday, I didn't know this but in Spivey's figure of 2,000 in the Forest Service wouldn't surprise me a bit because many of them are foresters that went out and came back and the Forest Service sounded like home to them. I wouldn't be a bit surprised what if you got all of those 2,000 together you could shake out of it three or four hundred that would be perfect candidates for some foreign assignment. I say perfect, not necessarily even technically, but that they interact with people, they are humble enough to recognize that we're not where they want to go or they should go. All these things that make people in other countries take a double take. This is an Americano, I didn't think you people were like this, I've seen the movies, you know, and I've seen the way you act and the way you perform and I'm surprised. There are some Peace Corps people who I think have left tears behind, I mean they've really been very genuine and didn't want to stop themselves, and the Peace Corps runs out somewhere between 18 and 24 months. I suppose there's a good reason for that, but I feel that the alternative should not be just being thrown on the track somewhere in the states to hike to the next town to see if you can find a job. I think we should have an open mouth to accept those people when they come back and try to find out which of them could form a part of a foreign service, as you describe, which could be different from diplomacy, but technical. I've come to feel, without knowing anything the details of Peace Corps, we've had some troubles with them officially because they wanted us to make a nursery manual which we made and we put a chapter in it about agroforestry which was cynical because agroforestry hadn't gone very far, they had a proponent of agroforestry in the Peace Corps who said this has all got to be taken out, and I wrote something else on some subject that I wasn't very convinced was more than fad, and it showed and they said they had to take that out, so we withdrew. And we have this manuscript sitting there.

HKS: Describe more the training camps. I read a little bit about what it was like to be a Peace Corps trainee, I mean it was to develop self confidence in your self, some city kid that has never seen the trees outside an arboretum. So what happened when they came here?

FLW: These were two camps that had already been built and the Peace Corps added wooden buildings to increase their capacity of dormitories, and I think they must have had 150 people at the most in the these camps. And their program was first language. As they described it was almost brutal, I mean they spent sometimes practically all day on language. It was physical. They would point to a peak and say get up there and come back in three hours, and it was all forest and junk. The guys would just do the best they could. And they had them repelling on the face of a dam near one of the camps. They had a great big concrete thing this and they would throw cables down and they would have to come up and so forth. They would take them to a far point on the island and give them 25 cents and say don't come back for three days. And they at first might be lost but they found very few people where they were, and when they did they had to interact in order to get food and a place to sleep. The job of Peace Corps was to separate people that didn't have self confidence enough to do it, I think. And they screened them before they even got here, and they stayed here I think two or three months. The stories that come from this business of dumping them off in the mountains were surprising to me, but encouraging because they all found the way. The country people kind of took to them, they didn't know Spanish very well, they were still learning. And the country people were charmed with some company and they would put them up, you know, or give them a meal or something and they got back to camp. So this was a tough screening thing. I often had them near the end, because they didn't want anything specialized while they were still preparing them generally. One of the things that I tried to push on them was don't think you're going to make much of a difference to anybody else, it'll make a difference to you. Don't think that in 18 months something that looks to you very odd and inefficient or unexplained, first doesn't have an explanation which may be good and immovable, but don't think you can change it in your time unless you have a very good opportunity to do so. That doesn't my you shouldn't open your mouth but for goodness sakes listen first. I don't know how many listened to all that, but I do know that several of them wrote back and said you know, nobody ever told us that, but that's the truth, it is the way it is out here. You've got a whole bunch of people doing something the way you think is wrong or unwise or foolish, but the straight line doesn't get you there. You listen and you find out well there's a religious reason for this, its something you never dreamed of, you know. Their ancestors have always done it this way and they feel loyal, so that day they don't work. You know, all this kind of thing. What they were finding is that the morals of other people are quite different form ours and explain a lot of things, and we have some too, you know, of things we do funny. That, I feel the Peace Corps from what I hear even today, is not adequately ground into young people that go out. It isn't that you have something you can offer the world and you're going to make a difference, its that you're going to go there and meet all kinds of people that are brought up under different conditions, you're going to hear about and you're going to work with them, and maybe do just exactly what they did even though it isn't the way you'd do it.

HKS: I would assume, I have no knowledge of this, that the Peace Corps people today are less idealistic and gung-ho than they were when Kennedy made the clarion call?

FLW: I think there's truth in that and partly because they are specialist. But the specialist has the difficulty that he thinks he knows more about his specialty than anybody else. And maybe he does. And that tends to make you a little less tolerant of ways that aren't the way you were taught or thought, whereas if you're just a generalist and went through lit school, so to speak, how you fix plumbing and electricity and build buildings all new to you entirely so you do what they tell you and you don't tend to be a forest for change very much. But I know foresters that go and see a nursery that isn't operating well can't resist from getting into the fray and saying well, this is crazy do it this way, and they immediately get branded, you know, as somebody off the wall or somebody that doesn't know why we do it this way.

HKS: Max Peterson told me an anecdote when he ran across a Peace Corps outpost in Indonesia, it wasn't part of his itinerary but there they were. And he asked them where their forestry, and they were working on a forestry project, and he asked them where their forestry support group was and they didn't have one. They didn't have anyone to ask a question, to get technical literature, so he arranged something to get them at least some literature.

FLW: There are two things there. One of them is when you get in the Peace Corps and you go to the country presumably there is a bridgehead in the society, a person or a group or an organization to whom you have allegiance while you are there. And this sometimes, if that person or that allegiance is not to your choosing, gets you off on the wrong foot and you spin wheels for awhile. The other one is if you are a forester and you land in a place like Malaysia and you realize well this is so different from anything I saw I don't know what to say here, who do I reach, and the Peace Corps is not. . . I think there are many people in the Peace Corps up top that has not wanted lines of communication technically that bypass them in the sense that they have a purpose that is broader than the specialty and they don't, I think, just want to be sending experts in the countries very much. Although a recent Peace Corps presentation I heard, I think it was in Richmond, indicated that they have places for experts to go and backup and volunteers that need some kind of help now, on a short-term basis.

HKS: There's been a Peace Corps recruiter on site with an office in Duke's School of Forestry, now called the School of Environment. And there's a permanent location for a Peace Corps recruiter in the School of Environment, looking for volunteers, with an office right there in the building. Well I thought that must certainly emphasize the importance of that sort of training. They didn't have one over in the Engineering School, for example.

FLW: I brought back from Richmond a Peace Corps handout that I think described this, I put it on the bulletin board, describing you could become technical support to Peace Corps if you wanted to on a short-term basis for such and such a country because of a problem. And that's a sign of maturity, I think the only snag in the Peace Corps that I see is the end is so abrupt and so final when you through. Then they make room for another person. I suppose that's their thinking. But if they could only keep the ones that would stay on, it wouldn't affect their recruitment potential very much because I think the percents not very large that would stay on. I think most women want to come back, and men--certainly more than half of them--don't want to stay out. If there was a way of graduating into this thing you talked yesterday about, junior experts, a Peace Corps graduate would be sent whenever somebody sent somebody to FAO or to AID or to somewhere, or some university would be required to take a Peace Corps in their team. Because this is going to be with this fellow forever. I don't think the rest of the world is going to catch up and we'll have no more aide. You know I think there's always going to be, there were untouchables for how many centuries, I don't know. That thing doesn't go away and the people who have don't contribute to make it go away. So I sort of think some form of assistance from those who have to those who don't is forever and I think we ought to make a long range approach to it, and not just throw money at people, or think its a quick and dirty job and we'll get on with something else. I mean pull out of a country after we've been there 10 years, its a mockery because it doesn't mean the country has gotten very far, it hasn't graduated. I think some of the European countries, and even AID now is talking of long-term projects. Suriman at Richmond told me that he anticipated we might get into countries for a period of 40 years.

HKS: You have to deal with all generations in order to get it to stick, I would assume.

FLW: And we've got to have permanent protoplasm there that becomes acceptable. The best of the Peace Corps people are just from the fringe of that, I think, when they come back. And one of the things about them that's both good and bad is that they are young, most of them. The Peace Corps is not all young, but, a lot of people are young and immaturity shows up to me. But it's drive too. I mean they have it. They may be going the wrong direction but they want to accomplish something. And I think older people just sit back and let the country continue, you know, as it has saying well there isn't much we can do about this, we've studied this one out. It think older people, even though they volunteered to go to the Peace Corps, probably are less movers and shakers than the young ones. I don't know where the perfect balance is. I'm not against the older ones going.

HKS: Another vehicle for helping NGOs, and that's an acronym that I wasn't familiar with until just a couple of years ago and its probably more to my limited horizons, and the term may have been around for a decade. But suddenly everywhere I see NGO.

FLW: Aren't you familiar with the fact that anything new is immediately described as since 1967? Agroforestry people are talking about ISOP was doing it, and all that kind of thing. I think the term NGO

wasn't thrown around much until quite recently, but there are NGO groups that may have internally used it. It's only recently that what we classify as NGOs have consolidated into a mass where they represent quite a lot of people and they themselves want to be recognized. It translates into Spanish, ONG, which is used very similar to that. My reason for wanting to say something about it is that I have a feeling that our government, and maybe many governments in the developed world, have been let's say discouraged by some of their experience in government to government operations. Collusion, political change, and the frustrations of forest departments that are there, of conservation movements that has not produced in the government a department of natural resources or something to which you can cling and strengthen. Lord knows we have spent a lot of money trying to strengthen the heir apparent of this job, of taking care of the countries resources. And we've found the people are not professionals, they are terribly underpaid, they will jump the traces for 5 cents an hour to sell gasoline or something, and there has been a great deal of slippage in our use of funds this way. Well as you know in our country, what we call NGOs, the Sierra Club, the Wilderness Society, the National Wildlife Federation . .

HKS: The Forest History Society

FLW: Yeah, the Nature Conservancy, are one, the most visible ones or respectable. They appear to be a political, they appear to be not self serving particularly, I think there is some self serving. At least they speak the high ideals and they attract intelligent people who many of them are decision makers, and in the other world I think these have are way, way behind us in these characteristics. But there are some and the militant ones environmentally, are made up of adventurers who are maybe sincere as they can be, often not good administrators, often with a fickle following because they take a strong personal leadership sometimes at the expense of a breadth of input participation and are not followed--its like a czar of some kind. But seen from outside the government from a foreign country, we're faced with the feeding the government more money and training their people and so forth, when the top people in the government we feel are not very cooperative. They say well we can do all this we want, the forest department doesn't get anymore money, things don't happen, laws don't get enforced and we seem to be doing our thing but it isn't bringing the results. A good example is ANCON in Panama, a very strong egotistical leader who is perfect in English, I think educated partly in the states, and is very persuasive. And he has sold AID that the government is inept and always will be, and his organization is made up of people like Smithsonian scientists and all kinds of people who are really on it. ANCON it is called, there's five or six in Panama but this is the biggest one. And they have been successful in getting AID to give them two or three million dollars for a number of projects, and one of these, as I think I mentioned to you earlier, is the protection of one of the largest parks, its a watershed in the Panama Canal Zone. They have their uniforms on people that are wondering around the outside of this area to try to keep it free of squatters. The government of Panama had to approve that project or it wouldn't have gone through. I don't think AID does anything without getting government approval. Whether the government approved it with alacrity or with pleasure I don't know, but it was ANCON instead of them that got the money. So you can't take the attitude that they were happy with it. And I'm sure that if ANCON has a problem with a politician around the boundary of this Chagris Park or with any influential person that the government will not support ANCON. I mean I think that's a given. Its as though we were going to put Yosemite in the hands of the Sierra Club, and there might be a lot of people in favor of that. But you don't and I don't as nonmembers of the Sierra Club want a national treasure such as Yosemite policies to be governed by a small group of people which we know are conservationists, but they are extremist too. And if their policies clashed with you and my views we'd have trouble. I really think that we must not get off the horse of the government. I think its government to government. We're a government that is going in there, I believe we should never give up on strengthening the government however inefficient. There may be times we don't do much because if its a poor time we might even do more. But I think our real triumph is the government is the people. I'm still naive about this. I don't think its we/they like many people like to think and the newspapers and all. And so I feel that our international efforts should always been strongly toward government. Now, that doesn't mean that if ANCON is struggling to meet its budget and do some projects that its got like a mapping project for an area or studying something and wants to get out a publication that we don't help them, and maybe help them a lot, again with a government nod. So that their function as a catalyst, as a supplement, as a stimulant in the country is stronger and they carry more of the load. But I have this problem with Henry Shinkle in Panama where three national forests needed management plans and there were no environmental impact statements so our uncle couldn't pay the money. We had to write the environmental impact statements. We found all three of them were in the wrong place to do the

management. One forest was already gone. Two of them were swamps that you couldn't get to. So we changed the whole project. On the Indian reservations, the Indians have blowguns and so the squatters don't come in, and they are the only safe forest in Panama as far as I can see. We went to the Indians and asked them if they would entertain a seven year project from AID, and get some professional foresters among them, there were agronomist already, and so forth. But when it came down to who we gave the money to, Henry and I locked horns. He wanted to use Cultural Survival, which is an outfit in the northeastern U.S. that has established relationships with tribes all over the tropics strengthening. They are a good outfit, no question. He said let's propose Cultural Survival gets the money and they pick out some NGOs in Panama and they orchestrate it so that's inside. I wanted the money to go primarily through the forest department. We did find out that the government and the Indians are fighting, in fact the Indians sequestered the Secretary of the Ministry of Agriculture while we were there. Held him for three days trying to get a bigger reserve. And so they weren't very friendly. But that discouraged me. I just sort of feel that giving it to Cultural Survival is throwing your bread on the water, I don't really know where it's going to go. However good they are generally. They may find that Panama doesn't agree with degree that they think that the tribes should have dominance over forest that's on national land, you know. We leave behind a potential mess, maybe.

Wadsworth, Tape 9, Side 2

HKS: I can see a program is maintain "culture" of the native population could run crossways with some government activity in the U.S. as well as well as anywhere else.

FLW: Well and cultural survival could have some people who don't believe in cutting trees, also, and cut us off at the pass because we were trying to make the tribe sufficiently financed so it could take care of the cutover forest. All of that's precarious, we pulled out, the AID mission has no foresters. The Panamanian government has some foresters with whom we traveled some, their friendly, but they are really not in the loop with work.

HKS: We have very good personal friends in Germany, we've been close to them for 15 years now. They've been to the states twice, stayed with us and they really can not understand how I earn my living. The concept of an NGO is really foreign to developed European nations, and I would assume its a relatively new concept worldwide. Are there many third world NGOs or are most of them U.S. branches or European branches like Greenpeace or whatever.

FLW: A lot of them certainly are, and a lot of them are subsidiaries of one kind, Friends of the Land or Friends of the Earth has one over in Malaysia that I ran across, and they were just extremist--long hair and everything else.

HKS: And these are Indonesian people?

FLW: There's always a few outsiders that are stirring it up, and there are Indonesians that climb aboard because they ran a long the road through our cemetery and we're mad at them, you know, so these guys build on that. And they are destroying their nomadic life because they are taking the trees down and all. There are always fragments of fact in what they are doing. If they go into an area where people are so primitive that they are not even part of the nation, you might say, socially, its easy to fantasize about what's wrong and they polarize things like this. But I'm not bad-mouthing NGOs per se, I belong to some, I belong to one here--the Natural History Society. I know our frailties. When we were offered opportunities to build and staff a nature center for San Juan we picked the place and did a lot of things, but we chickened when we came down to it because we were afraid we couldn't finance and run it. I think we made the right decision then. We find out that people who study NGOs tell us that NGOs are terribly poorly administered and their objectives change with new people and they are competitive among themselves and you're dealing with a minority, and its a very small minority, and a {mosifourous 38} one maybe that has views that are not shared by the community as a whole. So you wonder whether its like giving all our money to Greenpeace, I wouldn't trust them around the corner with the national concern. I think stimulating NGOs, the National Wildlife Federation has a checklist of 44 criteria on which they judge their members, there's one in every state or more. And they are all about how well you lend yourself, whether you're liked in the press, how you

administer, do you have bondage of your people that are handling money, a whole bunch of these things. Well that's good, and I really think most NGOs don't fulfill these things, they could be improved to that. And I don't know where the ultimate of NGOs is, but I shamed the government into doing a better job that's good enough for me. Monitoring them, just send a FAX and say well the law says you should do this and you're not doing it. That kind of thing, civil action suits and stuff. I think that's maybe a better role than handing them the countries forests or something.
HKS: Here in Puerto Rico, you were telling me this morning driving in, an NGO might sue the city because the police are failing to enforce the litter law. That may be kind of a wild example, maybe, but that's what's wrong with the states.

FLW: That's right, I don't know how far they would get with that, the city would say well, present evidence of people who have been littering, go back to the evidence, the photographs, and we didn't do anything about with one of our people present. That's hard to get, unless you get a policeman and stage it.

HKS: Let's move on, I don't know if this is an NGO or not, ITTO. What's that acronym stand for?

FLW: That is the International Tropical Timber Organization.

HKS: Timber as opposed to forestry, right? So this is a forest products type.

FLW: That's right. ITTO is new, its headquarters are in Yokohama, Japan. It's a spinoff from the United Nations, where it was concluded that FAO forestry did not provide a trade leak between producers and consumers of tropical timber. And that it was going to be necessary if we're going to sustain tropical forests to have the support of the importers and the trade. And so ITTO, it started with ITTC which is a commission that set up and created ITTO about four or five years ago, and it sounded like another FAO. And some 30 or 40 countries now are members of it. And it has made a number of studies, much of its money of the Japanese. The U.S. put some in, and the U.K. has, I believe, and Germany, and some other areas. Any country can ask ITTO to make a study or carry out a project provided it finances, its like FAO. But it almost always link production with importation or consumption. This man, Freziala, that I mentioned has been the director since it was opened. They meet twice a year or something, certainly once a year. Gary Mendell in Madison has a position and a committee of some kind. And I went on a mission for ITTO to Suralas, north of Borneo. We had a group of 10 representing three producing countries, three consuming countries of tropical timber. One trade man, one environmentalist, one utilization person, and a member of the House of Lords. Lord Crandall was the chief of the crew of 10. And we went three different periods of two weeks each into Surala. The first time we went where we thought we ought to go, the second time we went where they thought we ought to go, and the third time we {cheat to Wellaflat ?? 96}. We produced a report, it was in response to a request from Surala, they were getting too much hell from the greenies about their destroying their forest and wrecking a tribe of nomadic people, and they wanted an outside group to come in. And we made our report, I had a

HKS: Why would ITTO be the group as opposed to, I mean this a timber oriented group? What was the logic?

FLW: Surala is the biggest importer of tropical timber today. They export about a billion dollars worth, its half of their budget. And 60,000 people are employed. They are 70 percent forested still, but they are going fast. And everybody is saying they are going to hell, even Prince Phillip said that genocide was going on there. And the lumber companies, the timber companies, historically have not been constrained much by what they did in the country. The way they left the forest environmentalist thought it was terrible and everything. And so we did this. It fell to me to determine what the sustainable level was, how much they were cutting, and what might be done to close that gap. Because they were cutting almost twice as much as they was sustainable. And they have now, as a result of this report which did not satisfy the greenies at all because we went right on with logging but at a slower rate. They are cutting one and half million cubic meters per year now until they get down to 9 million, which was 13 or 14. Its heralded as compliance with our report. Well ITTO has done a lot of studies of tropical timber, where it goes, and they are friendly to these attempts to classify timber. They have come out with a system of criteria of sustainability. They have a worldwide committee working on that, the theory being that countries will accept this and certify that the timber that

they were putting on the export market complied. And I don't think its happened yet. But that's the direction in which they are going. I went to some ITTO meetings for the U.S. and Harcharak was my source of background. And a woman over in the State Department. And they said under no circumstances should you support anything that makes ITTO another FAO, and competes, we're having a hard enough time with FAO, we don't want to have two of them. It's just going to take more money. I don't think that's worked too well. I think ITTO, a lot of what FAO is trying to do isn't in ITTO's basket. They are moving ahead, they've got a lot of reports out, they have newsletter that they write, and apparently they are financed well enough to keep on going. Well, I don't know why FAO couldn't have done what they have done. It apparently didn't and they do have some newness. I'm sure they are not going to disappear, and I think there's plenty left for FAO to do in countries without dealing with the trade. There's been a lot of concern and confusion as to the U.S.' position in tropical timber trade. You can find information from environmental sources as though we were the prime culprit in this. Yet I think the statistics show that one and half percent of our timber is imported tropical timber. Ninety-four percent of the timber that's cut in the tropics is not exported, and the six percent, very little of it, gets to us. Most of it goes to Japan, and much of what we import doesn't come directly from the source. It comes through Japan or Singapore or Taiwan where its processed into plywood, and we buy the plywood. Certainly our dependence on tropical timber is nil. Our use of it for paneling and things is because its cheaper than other sources. We go and use Appalachian hardwoods, I think, if it went off the market. We could and it wouldn't hurt us. There are one or two interesting NGOs. WARP is one of them. They make musical instruments and they use specialty woods, and they don't want dirty skirts, and they have worked hard at sending people abroad, trying to develop a way of assuring that what they buy comes from areas where nobody can complain about management. And they have made music with Gary Hartsomer, who is now World Wildlife and head of a project in Peru where they cut the forest in strips and alleged that it was sustainable. It isn't I don't think. These people went right down there and they paid triple the stumpage values to get wood right from there. They shipped it up to San Francisco and got their members to buy parts of it and so forth. They needed a lot of wood of very special types for violins, harpsichords, I don't know what. They make musical instruments and they are victim to specifics. But the wood, it turns out, in their instruments is a tiny part of the value, and yet they are interested. I went and met with these people once and they are more environmental than you are, or I am. They really are fine people, and their industry is one of love I think.

HKS: I learned just the other day there is one species of wood that used only to make clarinets. I used to play the clarinet, so at our library we were commenting on this. I can't remember where it comes from, the third world. A species of wood that is it is used for.

FLW: Well I asked these people, suppose that you just ran out of something, would we stop making music? And of course they laughed. I think Jack Westoby put it right, he said well the reason we buy tropical is because they sell it to us cheaper than anybody else.

HKS: Ironwood for ornamental flooring strips, my parents home had that strip around the outside of each wall. But you could live your life very nicely without that.

FLW: Yes. There was an economist in California years ago that analyzed this, and I was dismayed because they came to the conclusion that the U.S. didn't need the tropics for wood. I think he's right.

HKS: Are you familiar with the book that came out three years ago by Reppetto and Gillis?

FLW: Reppetto was the name I was trying to think of yesterday or the day before. He's one of the people, I mean it caused a lot of comment, I think it aroused a lot of attention, and I suspect it was good in that sense.

HKS: Do you agree with their basic thesis, actually export is better than developing a manufacturing infrastructure within these third world countries?

FLW: Well certainly it isn't wholesale. I mean I wouldn't generalize that way. He's an economist and he sees the cost of creating an industrial environment in the wilderness, you know, which is fierce. Bringing in parts, training people, getting the responsibility, and setting up an assembly line somewhere there. I think the economic argument is not maybe the dictatorial one. I think that stumpage is underpriced for what its worth,

that's because its God given, its like water and air. And it seems to me that we'll always have poverty around the source as long as we don't have something to combat that. And one of the things to combat is to have the processing close to the source so that the people that we as foresters serve have a good living. Even in Finland and Europe its the poorest people of the poor that are out in the forest working. And it seems to me that it doesn't mean that everybody who cuts a tree will also be working at a factory, maybe his daughter will or something. I feel very strongly that the more you process close to the stump the better off society as a whole is, you don't ship all the bulk. Its true that the consumer being the farther from the processing you may not do the final processing, but you might reduce it to rough hewn furniture parts and things like this that all get shipped to San Francisco for Singapore, and then are put together. You know as it is now, Singapore is buying yellow birch form the U.S., it goes across, they send it back as furniture, we buy it. Why should Singapore be living off of Malaysia and Indonesia, and Japan living off them. Indonesia, Sarawak is only a few hundred thousand people--that's big, and they export everything in logs until recently. They have now reduced it, 10 percent has to be manufactured there, and they are raising it to 30. When they run it up to 30 they haven't the capital or the labor to process it. The Japanese are coming in and putting in plywood in mills in Sarawak and hiring Indonesian girls from Calamantan on the other side of the island and bringing them there to do the work. Well Sarawak doesn't complain about this because they really can't believe that they haven't the money or the people. But the only thing they get out of it I assume must be some pass through tax or something because you can be sure that the Japanese make the money on the plywood.

HKS: Well its like the Japanese building Honda's in Tennessee or wherever they built them, or Ohio.

FLW: And the girls are Islam, they are not culturally the same as the Sarawak people. There's no intermarriage. They go back at the end of six to 12 months, and they bring in new ones. Its jerri-maned situation all the way. I sort of feel that Reppetto represents the economist with his elbows out as though there were no unearthed factors in how society moves. I always thought that physical or technical arguments were ultimately the common denominator and were going to force society into shape. I don't think its true, nor do I think that pure economics does its either. It just seems to me that society has survived so many times in the face of not doing either of these things, and they've known about both of them that it's not necessarily going to be our solution. I think we should hear from the silviculturist, I think we should hear from the economist, I think we should hear from the sociologist and I think we may have a mixed decision process here. To come in from one side like my saying well, the Brazilians are fools for not TSI-ing the Amazon. I'm sure that TSI-ing the Amazon would double its yield but I know better than to expect it. For them to say that Brazilian hamburgers cost eight times as much because of subsidies than if they just bought them from the U.S. is a popular thing to say in front of an audience, its fun you know, people laugh. But I don't think it will change Brazil. Its wrong.

HKS: We're the last state that ought to criticize price support, we do dairy products, cotton . . .

FLW: The more I try to reverse it and say well how would we react if they came to us with this kind of a proposal . . . Well I came from the Middle West and I remember my father saying Indians are poor because they fornicate all the time and their fort. He read the Chicago Tribune once, which was about as provincial as you could get. We're made up that way. I think we're into almost every kind of inequity in some form in the U.S. that we worry about in these other countries. And one argument is well we can afford it they can't, and there is some validity to that. There are so many things, I'm married to a Puerto Rican now, and that's the second marriage. I was married to a very conservative woman, daughter of a Norwegian who was a disciplinarian. She was very moral and very strong in her ways, a church goer and all. I don't see the twain meeting very much. Both my wives have a lot in common, I'm very lucky that way. But they are so different in ways that at my age I wouldn't try to touch, I might foolishly do so as a younger person, but I wouldn't now try to Isabelita to become like Peggy. She's got far better reasons not to than I can think of, and they are almost all social, and they are almost all {Spanish? 341}, they are not on the table where you can mathematically prove them or anything like this. And I think with nationalism its true in the world and the way that international assistance has botched diplomacy. We are bouncing around doing things that are superficially maybe attractive. I agree with the people that feel that, at least in our field, that sociology was the neglected influence.

HKS: For the transcribers would you spell you wife's name? Little Isabel.

FLW: That's right, because as a daughter she was small.

HKS: When I took two classes in Spanish when I moved to California, I had studied French and German in college, the first conversation that I memorized was hold off Isabel. That's a common woman's name in the Spanish world?

FLW: Yes, its the equivalent of Elizabeth in English. Queen Isabel, Isabella it was in that time. We may have done enough to . . .

HKS: The next two, Latin American Forestry Commission and North American Forestry Commission, you talked about under FAO or related to that before. Is there more that you would want to say on that. By all means do so, but

FLW: Maybe a little bit on the Latin American one. I mentioned that I had gone to 13 meetings of the Latin American Forestry Commission, from the 3rd to the 12th, that's less than 13. Its continuing and its still limping. FAO kind of keeps it alive, they schedule it, they set up the meeting, they pay for place. Everybody comes at their own expense. They have an agenda, FAO does, the regional office in Santiago, Chile, and they give the secretariat papers which kind of set the stage for the discussion. Every country has a time to present its current problems and then in theory the commissions are there to question FAO's program and suggest new things. And none of us who go to those meetings have any portfolio to say that our government will do this or that. We normally can't even invite them to our country for the next meeting, although Latin American people often do. You know that its an exportfolio when they get home and they have to be sure they can. At the end of each meeting there's an invitation usually from some country to come to ours for the next meeting. Well, its not very technical. It has the subcommittees, there are only one or two alive. The U.S. formerly was very strong, and in Harper's time there were five of us who would go to these meetings, which overpowered any other country practically. It wasn't our intention at all but we wanted to succeed, and the U.S. was hardly Latin American. Just because of Puerto Rico is all. I still feel that the U.S. should, as a part of its support to FAO, should keep a strong finger in this Latin American window to be sure it doesn't fail that it completely fulfills what I think is its mission to bring together foresters. I think that forestry people should come to, including sociologist and whatever we are, to discuss regional problems because for one thing, as I said yesterday so many of our problems really are not national, they are regional. And the solution to them is much more efficient as a regional than a national thing. The North American Forestry Commission, I feel the same about keeping it alive but I don't fear for it because Canada and the U.S. are strong in it, they dominate it pretty much.

HKS: {Brent Specks 437} as a partner of sorts, wouldn't that tend to strengthen this too?

FLW: Yes, and yet when they wrote us first about the trade agreement and the new Memorandum of Understanding between the U.S. and Mexico, which came out just in the last months, on forestry they wanted us to list everything that was going on in Mexico by U.S. people and they said don't send us anything about the North American Forestry Commission. I never knew why but I think it is because they already had information enough, not that they didn't want to include it. And it turns out that the first meeting with that group, well they've had several meetings, but the first outline of their recommendations that came out, one of the tasks of our silviculture group is number one, which is to complete a silvics manual of tropical trees of North America that are useful. Which is U.S. and Mexico, of course. I was very happy to see that the North American Commission, in setting up its silvicultural committee asked that they concentrate on the tropics, and I think it should be that way with others. The genetics one has not, although I know Stan Kruvman has been active with the Mexican. U.S. and Cananda plays footsie all the time with IUFRO or whoever it is, you know, without the commission. And there are so many scientist that go back and forth across the border that have a lot of things in common, same species. But Mexico becomes kind of a caboose on this thing. I know that Mexico is more rightfully in the Latin American one than the North American. As I understand it, Mexico violently wants to be in both. If that's true I sort of feel that my contacts with this commission, which has met in Mexico City at least twice, I think there is some bigotry in there, and I think there ought to be more emphasis on Mexico. It think it ought to get a full third of the activity.

Wadsworth, Tape 10, Side 1, December 1992

HKS: In the IUFRO Forestry History Group we had five papers on Mexico Forest History at our Costa Rica conference, three by Americans, two by Mexicans. Is this mix roughly equivalent to a science? That there are a large amount of Mexican science that is being done by Americans simply because they lack the science?

FLW: Well of course we had the more advanced of those things and had more money. The CGIAR work that Rockefeller began on wheat began in Mexico, Morelog is still there--he's a forester but he developed the miracle wheat. And its done Maraguanuata or somewhere in the central plains of Mexico. I think its safe to say that research throughout the tropics is well behind our research in the criteria we use, and that's confusing on a degree because I think our criteria is much more scientist oriented than user oriented. The work that is being done in third world you can call research, which is often testing--trial and error sort of thing, is strictly user oriented, some nursery man that is having a problem and he's trying three or four alternatives to lick it, that kind of thing. There are people in this building who wouldn't call it research. That is one of the problems, and if you want to do something sophisticated like develop a world wheat no one country is going to cover, in fact they finally came out with a final mix that came from Japan. They raise the yield so high that the wheat wouldn't hold it up and the stalks fell over, and they found a very stiff stalked wheat in Japan and crossed it and succeeded in making a wheat to take to India. I think its right, I think you might say that there is a lighter gap between research in the developed world and the undeveloped world than there is between administration, because you have to do it--administration, but research looks like a luxury to a lot of countries, you haven't got people who have studied it. I didn't study it. It hasn't been a subject very much in universities. And statistics has come on and a lot of new things. And scientists, I think, are very bad at making themselves inaccessible to nonscientists in the sense that they use jargon, they require equipment, they have all kinds of referee procedures. An outsider really has a lot of doors to open to become an accepted scientist as we see it. Ph.D. alone is a tough one because there are of countries that don't have Ph.D.s, don't produce them. When one goes out and comes back its like the case at San Palo, they are academic and they teach or something and they don't want to do research. Those are situations. Three to two, the curiosity I might have is of the three from outside, what was the interlacing between the people who did that and the Mexican people.

HKS: As a matter of fact these were three anthropologist working on Mexico grazing nomadism, whatever traditionally in the 15th century, and these were Mexican colleagues of theirs. That's how we found about the Mexican who invite them, and have money from Rockefeller to pay their travel for those for those trips. It worked out well. We wouldn't have been able to discover them through our normal network. But the anthropologists being on site worked in a clevial way with these folks.

FLW: Anthropologists, I think, are some of the least guilty people going into a country and just doing some work with almost no fraternization.

HKS: We find very few historians working on history of natural resources outside the U.S. and Canada. Usually they are anthropologists, sociologists, economist, whatever they might be, but its not a fruitful field for historians. And I don't know if its a tenure driven decision they make. Its not a legitimate topic in the third world for historians to study, they should be studying nationalism or whatever. But historians are not interested in natural resources in a third world, seen through the radar of IUFRO.

FLW: I think the topic is good and probably has some awards in it if the subject were limited to conservation, it would become much narrower because it is much more recent and finding shreds of it as history even in Puerto Rico, I did some digging on this and its hard to convince yourself that somebody did something that was, in effect, conservative measure, did it for that reason without being pressured by other forces. But I think the disappearance of resources, the way it happened, how it happened, the impacts on society, nomadism, all that must be a subject of a lot interest and maybe its site specific, that is not the same in each country.

HKS: I'll take you up on your coffee break. Okay, World Forestry Congress.

FLW: I think its fair to say that representatives of this institute have been president in most world forestry congresses, but since I was director I don't think Washington has more or less said we must. I think they've approved and I really wonder if we shouldn't be almost one of the first people on the list. There often is a group move from Washington going, and I think its based much on their grade or their positions, not that they are worldly because many of them aren't. Of course international forestry goes and is strong. I'm sure Suriman and his people will be well represented there. Our role is so internationally always that one might have assumed that you get picked out of crowd and sent to go. The Southern Station never thought of us as typical of them at all. If we ask for it we're likely to get it, but the initiative is not with them because they are provincial people. When we mixed with the Southern Station we got administrative advantages but we lost the breadth of the program because Washington was broader than New Orleans. And the same is of course of Atlanta for the forest. But aside from that, I've gone to many of these. I went to Buenos Aires, Indonesia, Seattle, Madrid. I didn't go to India because Red China was invited by India and the U.S. pulled out. Tom Gill and several others did go, who were not government people. We always very officious, I think, at those meetings. We organize ourselves, we have breakfast every morning with signals, there are announcements made, signs made, and almost everybody has got a job to do. The last one I was in Mexico City, I was kind called a rapporteur and I spent almost all my time at a table like this with people bringing in documents from different sessions they all went to and so that when I left I had a hundred pages of summaries of everything that happened in the meeting. I washed my hands and I've had nothing further to do, but I didn't get to meet people, I didn't get to go out, and I didn't do anything. I'm not sure that's right or wrong. I did attend the ISTF meeting. I'm not so happy with these congresses as I was, but I think its my fault. I think in the broader sense they probably are worth it, are useful, I think it probably brings a lot of small countries up to date on what's going on all over. Something that I can't evaluate very well. But to go and meet old friends sounds to me kind of like an expensive justification for it. I don't even know where the next ones going to be, I guess I heard.

HKS: The next IUFRO conference is in Finland. I don't follow the World Forestry Congress myself.

FLW: The World Forestry Congress, one of the odd things about it is that the proceedings is a very, very costly thing. And the last one that we had, since we are in danger of never getting the proceedings, I've always seen to it that we've got all the papers we could while we were there and get them sent back in a big box. Indonesia published their proceedings, seven volumes, and then couldn't afford to ship them. We had all paid $225 for these things. So we tried going through channels in Jakarta at the U.S. embassy and stuff to get a copy and get it sent back. It didn't work. When I was on this mission in Malaysia and there was an Indonesian there we became quite friendly and it turned out he was pretty high up in the government and I said you know there is only one copy of that in the Western Hemisphere and its in Washington. They brought it back or something, I don't know how they got it. And our library needs it, we have all the other ones except that one. And he said I'll get it to you. And it sent it by ship, and it took four months, but there it came wrapped in all kinds of fancy stuff, and was in good shape when we got it. I think that stuff is just being eaten by termites. And the Mexican ones we haven't got, and there is no way of citing those things very well if you haven't got them because papers were given a symbolic number, which had nothing to do with the pagination in the final report. You can cite it but nobody else can find it, its not available. That's the sad thing.

HKS: It would seem to me, naive as I may be about international affairs, that this thing would working through some overall budget and somehow if you had the money to whatever it takes to put on the congress would include the cost of producing and shipping the proceedings, it would be just integral in the whole budget. Apparently no.

FLW: The first one was in Finland, and Eino Saari--a Fin, was the director of it. We ran into each other in Argentina, he's a very fine man--he's gone now, and when I went to a Latin American Forestry Commission meeting in Argentina, the World Forestry Congress, the next one coming up was under consideration. Both India and Argentina had invited them. It was 1950 something, and India got it. Well I was told by the State Department that I should in no way in Argentina say anything that would suggest that the U.S. agreed that it should be in Argentina. Well I was worried about this because Peron was general and hated the U.S., and they had 26 lawyers on their delegation at this meeting, and I feared it would come up and ask for acclamation and I would have to sit down, and then I'd be kicked out of the country. Well, I went to Eino

Saari who was there for FAO and asked them if the subject of the World Forestry Congress came up, its location was not on the agenda but there wan an item FAO wanted to discuss it, would he be willing to speak to the trials and tribulations of planning and running it. He did an admiral job in Spanish, and he told about how they had to go to the private industry to get enough money to get it going, and three months later they were still paying the bills, and they haven't squared it yet and Argentina was so broke that it never came up on the floor. I'm not sure that killed it but it was certainly pertinent. Then Argentina did have one later and they did well, it wasn't long after Peron was gone. I don't think I have anything too constructive. I think the papers that are presented there are relatively inaccessible because of the long period afterward before they appear in proceedings, and their relative inaccessibility in most libraries. Because these things are expensive, and proceedings generally are hard to find in libraries, much worse, knowing what's in them.

HKS: What would you say the quality of papers was to generalize? Isn't this also a ticket to go to the meeting, to read a paper?

FLW: Yes. They had good people giving the papers. My feeling about this I think is a general feeling that proceedings papers often are less profound than journal papers, and that there is an element of your being forced into a time frame for a meeting that you hook them dirty at a job and bring them up to where you are and you mention in the end that this is going to be published in the Journal of such and such later, and that journal publishes it before the presentation of the subject and its the better one to cite if you are going to cite them, for various reasons. The meetings are packed with presentations at the expense of the discussion often. The amount of time for discussion frequently is cut off by the clock, because the guy either talks too long or the program is just too damn full. Richmond had an element of this, there were some sessions that I was in Richmond that I think the discussion would have gone on. Those afternoon sessions ahead of issues, they would have gone until midnight if they had left it open and I think it would have been kind of interesting, much of it. And I'm not sure how long you should let it go. I think the generators of these things of these things are eager to get as many countries as they can and as many people as they can, and you end up with five papers in a three hour period. Then how do you get the questions. And the audience has a lot of timid people in it, language problems and everything else. Its just the opposite of stimulating. In a meeting of 200 people or more I won't raise my hand, I have a negative block there. I just don't think anything I know is that important. So it tends to be exhibitionist in all the places.

HKS: If I have the dates right in 1978 you took a new career, were you no longer the director. Is this correct, in 1978? So I wrote full time for research, I don't know if that was the right heading or not, because a lot of what you do.

FLW: That's the way it sounded then because we did not yet have approval of a technology transfer problem in our project description. And that came later, but it wasn't a sharp change in my job. The only position I could come back to, my title didn't change as a research forester, it still is. I'm being paid out research funds. So I did the same thing that Gus Pearson did, I voluntarily stepped down from an administrative back to a research position. It was research that I was doing, I don't know what portion of the time. I was working a lot with the long term measurements on the forest. My first ten years was all regeneration practically, but we got the old plots started. And as the old plots got farther along they were more interesting all the time. So almost all the recent things I've done have been related to the management forests and not plantations. In fact Pete is into this line planting in through the forest which is a gentle way of converting for which I have total sympathy, but I haven't included what I'm doing. He's doing it, its his answer to secondary forest that are not very rich. I have a more optimistic view about what people will use later in the future, and so almost all the secondary forests I think are either rich enough or will be, giving the birds and bats a little more time to spread seed. I work almost entirely now on such things as I have done, and I have a rather major paper that's waiting for a girl to do some of the computer work on it.

HKS: I see on this list there is no discussion of the book that you've been working on for so many years. Do you want to enter that in the record, or the book will speak for itself when it comes out.

FLW: If it does. Yes, I suppose it should be there.

HKS: What's the title of it?

FLW: This probably is the place for it because it was the reason I mentioned yesterday that Buckman felt that I should spend my time, the rest of the years I had and so forth, on the book. And its title if Forest Production for Tropical America. And the concept was when I made my trips around to the research stations and schools I was appalled finding them using U.S. texts, some from Madrid. Virtually no texts on forestry in this reason. Bruce & Schumaker was found a lot of places, nursery practice. I could see how the faculties were virtually without a resource of which worked, and the teaching was all parent like. They had notes, they read them off, students gave them back to them in the exams. And there was very little experimental work, very little library work, in fact Ed Merrit had the richest of the schools in Venezuela. I found three copies of a book that didn't have only one, you know, there was just no addressing the student excess problem in the libraries.

HKS: This book is in Spanish?

FLW: I wrote it in English as a supplementary text for teachers in teaching forestry in Latin America because the GPO is supposed to be publishing, the General Printing Office, and they wouldn't publish it in Spanish, or at least I didn't think they would. And we have not provided for translation as yet. The assumption by Stan Krugman and I guess me too, is that if its any good it won't be a problem. A German book recently came out in Germany, got into English and Spanish.

HKS: So your Spanish is not formal enough to write a book in Spanish?

FLW: The process of putting together all that information would have been very difficult for me to do all the translating as I went, because I site people, there's an awful lot of things, I did a lot of editorial changes. I'm a much quicker editor in English than Spanish. So I had no fear about that recognizing that we would have to hire somebody to do the translation and that I would oversee the final copy. We've been told that AID probably wouldn't translate it. IICA, which in Costa Rica is outfit in the National Institute of Science and Agriculture or something, might. I don't worry about that too much, but I'm almost sure that nobody in Washington is planning to translate it. We did get the second treatment of translated when Doc Little was up there and put his finger in people's eyes and they got it translated, and it came out in Spanish from up there. So this is one possibility. But I have another concern and that is I'd like this to get to students, not just the faculty. And even with subsidy its going to be expensive enough so that it may be only a fairly well represented book in libraries, not in back pockets of students. Another possibility that has been broached was that because its long, its something like 1300 pages double spaced without the bibliography as I recall it, and that makes it 1600. There was fear that it would appear in two volumes which would make it expensive. The alternative that was suggested to me is why don't you break it up and publish it in pieces and people would have the pieces. That may lie ahead of us, I have to find out what this final editor comes up with in terms of alternatives. I mean I think that he's concerned with the length, and probably ask me to take whole chapters out and things like that for all I know. And I've got to weigh that.

HKS: Would it be possible for you to ship us a copy of the manuscript for our, its a useful research document. When you say it will probably be abridged in some way, this the full story, with your full bibliography to have a copy on site, and people will make use of that. I mean there is a xeroxing expense is what we're talking about.

FLW: If you put it as a part of a process that has historic interest, I've got some very versions which are all marked up. The present version is on computer here, word processor and it can be printed. Its double spaced, we could even make it single spaced I suppose on the computer, to save a third of the volume.

HKS: Yes, single spaced would be logical.

FLW: Whether we could print on both sides I don't know. I'm just thinking of the bulk of the thing to get through. You probably have a storage problem.

HKS: I see a lot of interest in the Raleigh Durham area for student research, Yar Larmon types, students that come to the Forest History Society and we have a copy of this document, the full document, and I can see students using it.

FLW: Let me go further into what's behind it because that isn't what I wrote it for, but its not a purpose that I would be opposed to. I deliberately dealt at the undergraduate level. I went at length into the physical background, climate, physiography, soils, ecology, hoping that the student would not have a reversion or a rejection of ecology because of things we know about. Wildlife is treated as integral with trees in a sense that without one you don't have the other kind of thing. And I didn't try, Pete, to say what science presented last Thursday.

HKS: But for a first world student they are operating at the best of undergraduate level, even if they are graduate students. They don't know the ecology.

FLW: This was my thinking. I expect to be shot out of the water when it appears, if it appears as it is, by some propeller tie types on faculties in the U.S. because it didn't show somebody's work, because this is now obsolete because the geologists have found out that tectonics are different or global warming isn't mentioned, I don't mention computers, agroforestry is treated at a stage at which now it has gone much further and that's a matter of opinion. I think I can live with that provided that it doesn't kill it as something worth translating, because my audience will not be ones that criticize it. I know there are people there that will use it. As I say if I kept back into a corner what I might do is publish the series, you know, volume I, volume II, volume III, and each one would have 30 pages.

HKS: Is it geographical in construction?

FLW: Its the whole of Latin America, all of it.

HKS: But you don't have a chapter on each nation?

FLW: No. there's a lot of climatic regions. And I have an appendix which analyzes over a hundred species as to their characteristics, things like that. Its management and production, and so there are certain aspects in forestry I don't deal with. I don't say much about the social side, I don't say much about the administrative side. I don't pretend to be an expert on that at all. I do deal a great deal into the process of reforestation, of management of secondary forests. Those are the things. And then I have a final chapter which does deal with how to get the job done, and I deal with one to one, dealing with people, some axioms for experts and that kind of thing. I've met a lot of students at universities and faculties, and I've seen what I thought was a live mouth open for this kind of thing. And if you would get it away from the professors in the sense that the students can read it too, you'll shift from the parent into the well, why don't you try it, go out to the nursery and see what happens sort of thing. I deliberately included conflicting evidence that was published.

HKS: I would think Rockefeller would put up the $10,000 for translation without any trouble at all.

FLW: One of the things though, and I'm glad you hear you say that, one of the things that I would like to see would be a big edition put at a heavily subsidized price. Even though I went to truck drives and other things that have nothing to do with this, and then a fairly good size load sent to every country to schools.

HKS: What would be a reasonable price for a third world college student to pay? Is this $10 too much, or what level?

FLW; ISTF memberships, its $10 to do that, and we have a lot of people there. They are mostly people who have jobs, they are not students. I wondered if there wouldn't be a student rate of some kind. I don't know how we would administer all this, but ISTF might be the outfit. And institutions would get a rate, and any student that wrote in and said he was in such and such a class would get a copy. Its big and its fairly expensive. I feel that those are hurdles that we can get over, but I don't know how. I would hate to have it a coffee table book like some of the other ones that Bob produced through his people, Peter Koch's four volumes, which nobody can afford and has a medical area in the title. He used the wrong principle.

Wadsworth, Tape 10, Side 2

HKS: Okay, you don't look to the U.S.

FLW: I don't look to the U.S. either the audience or the legitimate critique of what I did. What I do get concerned about is that I haven't touched it since 1989, and I will have to put a historic title on it soon. As I told you the other day, the high point of my references is probably before 1970, and I have no apologies for this. I've kept track of what has gone on since. I realize that I'm not leading people into the computer world, I'm not screaming about global warming and CO®MDSD¯2®MDNM¯ and carbon and all those things. I'm talking about managing forests and primarily for their products. But I don't think the ecologists can say its entirely timber oriented because it really isn't.

HKS: If having it printed out is a problem, if you could give it to us on disk we could run it off ourself. Obviously we prefer you go through your bureaucracy of running it off, but if that is an impediment.

FLW: Pete, I'm not at all negative to what you're saying. I got a call from Cornell that is trying to produce a major database with stuff about the tropics and how they heard about it I don't know. But they wanted access to the bibliography and the man spent 20 minutes on the phone, he was obviously no ordinary person in the sense that he was very sensitive to the fact that I might not want to do it, but he felt that this would lose the identity of having come from me but the additional references would go in and just enrich their source, which I couldn't object to. And didn't in any way reduce the value of the book. I am concerned because of a couple of colleges wanted copies, such as you're saying. I'm sure they would plagiarize the damn thing all to hell.

HKS: The timing is not significant to us, if after the book comes out to get the full manuscript would be useful probably. If its substantially reduced because of publication it strikes me unless its multivolume it will be edited severely for length.

FLW: I understood by the end of this calendar year we would have had our meeting with the editor. I might get a call anytime to come in to Washington in December for a few days to sit there with him, or go to St. Paul or something where he is. But it hasn't happened and I assume he's behind in doing it. Its a big job. And the way he talked to me it sounded like he might be spending a lot of time on it. So that passing something to you before this process goes on reads instance obsolescence of what you have, it doesn't mean it isn't complete. But if he emasculates it maybe I'll pull out.

HKS: I was just proposing it because I know that so much interest, people come to our library because its user friendly unlike Duke's, we can find things for them.

FLW: A lot of things I cite there are not in the U.S., but I don't have any apologies for that. The British colony annual reports from all the colonies that are all at Oxford, back to back on tape. Rockefeller did that. Some of the people in the field came up with excellent answers to problems we're still tussling with. Well, I'm not sure there is much more to say on it, but I have fears that even if I slide through fairly easy on this last editorial process there are probably another 24 months before GPO's birth. And its been tailored to their requirements and we've had new people in the Office of Forest Service there. There biographies by Antsie or whoever you do them are a matter of personal opinion in that group, and maybe the new people have changed. They insist on our changing it. One of the best things is that I spelled everything out, the United States Department of Agriculture. And I was told that even most people don't do that you won't be wrong if you do that. And its on a computer so it prints just as fast with all that in there. It takes a little more space. They said that there were people that abbreviate them different ways and you get into real trouble, JURJ, JURM. And some people put the date at the end and some people put it right after the name. We took Ansie and followed it, but spelled things out, and everybody has said that we're safe. It remains to be seen what they say in Washington when they get it.

HKS: Okay, Man and Biosphere. Is that a real thing or is that just some kind of fancy title that we put on a project?

FLW: UNESCO was the source of the Man and Biosphere program and began with a very large number of committees to study different aspects of this broad subject. I got on the tropical forest committee, I think Lugo probably still is, and there's one on tropical islands, there's one on deserts, committees on tundra and everything else. Out of it came the concept of biosphere reserves which are places recognized by the government of a country as being particularly unusual with regard to biosphere and a location to demonstrate proper management of the land. They are not necessarily lock up reserves. In fact they were never intended to be. Unfortunately, or fortunately, in most of the developed world that I know of people think of them as an international responsibility of their government to keep it inviolate, and its made it possible to save areas which the national laws would not have been enough to preserve. And so we have biosphere reserve, not very many in Latin America, there are three or four in Mexico, and there are some in Costa Rica, and I think in Brazil, Cuba has some. There is one I think in the Lesser Antilles, and we have two here. The U.S. interestingly enough announced through the newspaper 16 biosphere reserves, one morning, including ours and the Smokey Mountains, Kenai in Alaska, Los Andrews I think, and it was surprise to everybody. And what had happened was that Jerry Franklin and two other guys were headed for a meeting in which they were feared that the Russians were going to set aside more than we had. So they got hold of the maps and they decided which ones to classify and the regional forestry man was furious when he read this in the newspaper, that his national forest was a biosphere reserve. The Virgin Islands has one. And he thought he's lost control, and he didn't know what it meant. Of course we get a plaque and its there, and its the research tie is to man and the biosphere, not the national forest. And it hasn't changed a thing except that we had a ceremony, and we're supposed to behave. We can cut trees in it and farm it, we can do a lot of things, all are supposed to be good land use. We have one in the southwest, the {Bwanica 104} forest which is a desert area kind of. We, like others, kind of use it as thing well we have to take better care of it than we would otherwise. I think that has been good. The things we don't like about UNESCO are things I'm not entirely familiar with. I have a suspicion that there is a personality problems. I think there are some people there that are anti-U.S. in UNESCO, and they operate independently in Rome. We cut them off without money, I know that. I assume that they spitefully go right on, whatever they can. The meetings I've been to of UNESCO have been highly environmental, very sensitive to ecological values, and very little said about timber production. The Man in the Biosphere program, in my view, has subsided. There are still committees, they are still fairly active, but the big splash we have in the library let of space of reports that were all generated in the early 80's or around in there, the first half of the 80's. I have no lack of sympathy with it but I'm not any more elated with it. And our biosphere reserve here, there's a report I think we send in every so often--five years or something, in which you report the things you did reserve.

HKS: Its really a monitoring process?

FLW: There's a reserve, there are two in Mexico that are very unusual. One is in the northwest of Mexico in Chiquaua or somewhere that has counterpart in Beaver Creek, Arizona. Somewhere people in the southwest worked some companion research, kind of a twining between those two. And we've talked of doing between Keel and one near Veracruz in northern Mexico which is the same latitude about. It has never happened. The biggest remaining unknottified rain forest in the North American continent, I guess, is La Condona in southern Mexico, and its a biosphere reserve. You see a lot of sulas or something like that. All I know is that it is relatively protected. Its nothing like we have here, they have big animals and cats.

HKS: Its protected because its a biosphere reserve or its protected anyway?

FLW: It was protected under law, but Mexican history doesn't approve much by that. And the biosphere reserve was an added stamp on it that, I've been around it, I don't think its being invaded. We've flown over it and its exciting looking place, 300,000 hectares or something, right on the border with Guatemala practically. And not especially good timber. But it is a big wet forest.

HKS: The SAF tropical forest statement can be included as an appendix item as a brief statement. Do you have any background or insights you want to add to that? Does it speak for itself? Was it political or controversial?

FLW: I got involved in this because it was sent out in draft and I responded to it with a certain amount of concern. I felt that the tropical forestry committee which has been composed of people who are often in international forestry in Washington or Syracuse University, maybe Jan Larmon and I don't know who else, had been rather academic in their vision of the SAF's role in one sense. In another sense they said things that made it sound like they expected to go out like another state Department and hold the hand of foresters in other countries to help them technically. I didn't feel that either of those was becoming. What I saw, and this is purely personal is that a societies most role effective, oh another one was sending people out on the these trips to go to Brazil and see what's happening-a tour. I had something to do with this with AFA and never again, I think we are very, very poor at that. We send overfed retired people with clean shoes, they don't want to see anything, they want to shop, and they go. I made all kinds of arrangements with friends in Brazil to get them out to see all kinds of things, I'm still mending those friendships because they were chagrined that people didn't want to sit in jeeps, you know, all kinds of things like this. They thought these were foresters and they weren't. SAF is more, of course, this way. SAF, nobody can afford to go on these trips as a business person. I mean the wife and kids, you just cannot stop and pay $1500 during the week to go and see something. You end up with people who can and they don't tend to be very foresty people. And so I think really it's better for you and me and our families to go to a place that we want to go look something and if we want to go look at something foresty we do it. Rather than this kind of a thing, or invite the country people to come and see our and we take them. There's a real difference caused by, I think, the cost is part of it. Now what I felt society should do, or one of the things I felt, and I've gotten no reaction to this except somebody answered that they were interested, was to search out other societies throughout the world and begin in the developed world. One of the things that is a pet peeve of mine is logging damage. I think that the profession is going to criticized forever for logging damage that has destroyed forest unnecessarily, well beyond any criticism we deserve for deforestation. I think the forestry profession is a companion to, but not really the cause of deforestation in the tropics. But what we do condone is some young kid with a timberjack that's tearing out logs at right angles and full tree pulling out, and things and leaving the forest unnecessarily without a next crop. I mean they leave crud there and then the shifting cultivator comes in fells and burns the rest. Who is to criticize, I mean what has he destroyed, well nothing, there is nothing left. I think our profession cannot blame anybody else for this, and I would like to see--begin with an across the board resolution or ethic or something why the societies of foresters, probably in the developed world to begin with if we are going to influence our government to put conditions on anything we do, that logging damage has to be damaged. And then bring in the societies, many of them are very weak. The IUSF, which you probably know all about, the International Union of Societies of Foresters now headed by somebody in Australia, I think, has that role. And its function has been mostly to try to help limping societies get on better ground. Its weak in the very places where societies are most needed, in the weaker countries. Latin America has, I think Bolivia is a member, I think Mexico is, and I don't know who else. And in ISTF I had written up who was members and who is not, encouraging people to join. And I've gotten some kudos from the IUSM because they've been trying to get more members in. But the Society of American Foresters is far stronger than the others, and it seems to me that we can go Germany, Japan, all those places and pick out, well what I proposed to them was that they go to AID to finance a meeting, an international meeting, with representatives of the societies, maybe at a World Forest congress, I don't care where, whatever is the most practical. And you look at global problems that all the societies are commonly concerned with. Certainly the tropics is one of them. As I see it the damage to existing forests and logging is one of the most disreputable things. We deserve all the criticism we get because we know that. I have evidence in the library to show that you don't have to, and its very simple. You put some people in the woods supervising, to fell the trees directionally, you use equipment wisely, you use animals instead tractors where you can. There are all kinds of systems, the Canadians use them, we do, the {England ?? 242} empire, and in the Appalachians that's not being done. My feeling was that the society ought to get the developed world societies of a mind about some missions and then bring in the developed and undeveloped world societies, temper those issues if necessary, but stand as a body so that those poor little guys in those countries, we have 10,000 members here that all over the world are concerned about this problem that we've been telling you about and you haven't done anything about it, so what about it? Well, maybe this is idealism but I don't know. But I think we ought to operate at society level to begin with. And individuals in society who are Peace corps graduates or others who want to go and do things with subgroup societies, I think its fine, the more we look at. The AFA has just published an international paper, maybe you've seen that it just came out a week or so ago, I got it from our charge. I was on the board there for years trying to get them to have an international view, because the AFA is the most mature organization of forestry, and a lot of these people must be worried about the

future. And why not. Well I had from Warehouser there, from Georgia Pacific, on the board. They didn't care about it. And it never came out in the proceedings, the meetings, or anything. And when I left, I went for six years, I asked that Dave Harcharak on the board, that they have one internationally oriented person. And he got on the board. He was kind of inactive for a couple of years. Apparently they worked around until now they have a statement, and its a good one. Showing a concern for moral things. I think they have been driving by publicity on deforestation though, that as much as something internal. Its happened. What it will lead to I don't know. The society I think, and I like the World Forestry Committee in the Society. I'm a member but we don't meet much, except at meetings, the annual meeting. And their newsletter is very good. Yavorsky was on it for many years, I think Pete Vandurst is now the guy. The society has a role in the place I think. And we are much more provincial than I think the European foresters are as a group, and so this ought to be easy.

HKS: That seems to me, leaps into the next topic, public concern about tropical deforestation. Is it justified, the concern we have? I go to a frame shop, we get out awards and plaques, and the frame shop guy showed me a letter he got to stop using tropical woods for picture frames, it was a campaign against that.

FLW: That's something to one side, its kind of ancillary about the trade. As for the deforestation itself, there is no doubt but what deforestation is proceeding at a rapid rate, and in many countries where everybody in the country knows pretty much that its one, destructive, and two, it foretells of uncertain future. It think the first pinch will not be wood, it will be water. Every capital city in the tropics that I am aware of at all, all of them in Latin America, have major water source problems. They go a long distance, Nairobi goes miles to get its water from a forested area. I think that water is going to dictate where forests are to a great deal reading the long distant future. The deforestation that is going on, the pictures that we see mostly are in the Amazon. And if you look carefully its all flatland. Its followed by farming or pasturing, which lasts three, five, six, or seven years before they move on to another place. And when you're in that region surrounded by trees, there are trees that you flew over getting there for miles and miles and miles, and trees that you'll fly over getting out. You understand why people find land the one thing that is in excess, and that trees are in the way. And that the distance to consumers is great enough so that only four or five timbers float down the Amazon. The rest of them either are used locally or burned. This happened, as you know, in Pestigo and places in the U.S. We didn't harvest stuff at a loss. I have a personal opinion that it is going to very hard to stop continued deforestation in the Amazon, and it could well ultimately take care of two thirds of it or more, the deforestation. That doesn't mean that all that land would be unforested indefinitely. The lands that are worn out are abandoned with fresh land not far off. The abandonment takes place generally before its desert. The country has lots of rain, the soils are deep, so desert isn't the product. It is a yellow, ugly vegetation, first verbatious, finely shrubby, and then some trees come up and it takes time. But the vegetation is very quickly protective, and physically the soil returns in as few as four or five years, physically, to its former porosity. Chemically it takes 20 years, maybe, 15 to 20 years to come back. Long before the forest looks like the primary forest. These are problems for the forester. It led me years ago to believe that our research dedicate all its time to what to do with secondary forestry because that's what we're going to have. They won't give it to us before its secondary, why should we learn how to manage primary forests when the agriculturist are going to run over us as they have in West Africa. Coco in West Africa has just taken over the forest, they fell them and plant coco, this is a tree. And so its only when its garbage that we'll get it. And we better learn how to make that do something. I don't think there's anything that you and I can do to stop the hungry person from cutting more forest in a short time. What I do think is that if Brazil, Mexico and some of these countries had an agriculture extension service, which they don't have, that it would deal at the level of those people. The pressures could be reduced quite a bit, they could make the land last longer, they give them better seeds, maybe do genetic research, I don't know. There are a number of tree crops which in Malaysia and Indonesia they have continued with for several rotations in land like the Amazon. I'm not sure we all want that much black pepper, but there are some options. But I think the deforestation is going to continue with or without us.

HKS: What I read so much, other than all the medicine that must be out there that we will lose in the extinction and so forth, is the fragileness of the crop of the soil and deforestation depletes the soil stock. Is this a generalized statement that is accurate, or is it . . .

FLW: Its accurate wherever the rainfall is more than 60 inches. The nutrients are in the biomass and not in the soil. And so when you remove the biomass or you kill it leaches out and it disappears. What stops farmers and makes them move to a new place, which is very argas, they don't like it but its the alternative, yields go down. The first crop of corn is excellent, the second is pretty good, and so forth. And weeds gain. Successful weeds prosper where there's very little nutrients, they are efficient that way, they can operate on poor soils. And they have a growing advantage over the crops which are more delicate as time goes on. So its either weeds or low crop that forces the guy to the next place. But that I point out that the soil is rebuild fast. They are not terribly rich maybe, but they'll grow a good forest. Of course farmers do rotate in many countries, here they got down to rotating every four years before the people gave up because it really didn't build itself that fast. And so agriculture became not very productive. The deforestation, I believe foresters must look beyond just the satellite pictures because a lot of land that is deforested is like the land of the Ohio Valley which has no trees on it. And we are not in favor of putting that back in trees, its got chimneys on it, and houses, and cattle and all kinds of things. And that is what Brazil says, and they are not alone. They say that what we see in the movies is a lifestyle we all would like to have, and we haven't got it. And its our understanding that you did it by exploiting your resources, and that's what we're doing and you're trying to hold us back, presumably for competitive reasons.

HKS: Do you think there is any truth to that allegation?

FLW: I don't think any of us see such a direct relationship between slowing the deforestation and continued slavery or whatever you want to call it.

HKS: I mean cheap pulp from Brazil, is that not desirable for American industry, so there would be a reason for them to keep doing it because the paper industry lobbies for it. I mean, is there any evidence, did you see that we are in favor of deforestation because of the import of pulp?

FLW: No, I don't think so. In the first place, there's plenty of deforested land already to plant, and of course we have some American companies in Brazil. The U.S. companies now are very, very minor in the tropics. We have pulled out of a lot of things we used to do. Of course Jari is gone and Warehouser is gone.

HKS: I was thinking of international paper, whoever buys this stuff. They don't have operations in Brazil but they get cheap chips from Brazil so they like what's going on.

FLW: Well, that's right and Brazil wants to export. But if they want to go in there they go in on a 49 percent basis nowadays. You never can get full control of what you're doing in those countries. What happened to Jari is a lesson, I mean its dangerous to invest in a country like that. Ludwig had almost every stop cleared, but the one they smeared him on and he couldn't do anything about, so he got out. I was very sorry he left because I felt that if he'd gone a little further he would have proved that he could have sustained what he was doing. And it would have made possible the production of timber on such a tiny fraction of the . . .

HKS: There are plans afoot for me to interview the general manager of Jari, who lives in South Carolina.

Wadsworth, Tape 11, Side 1, December 1992

HKS: Is there anything particularly significant. You have more to say on this?

FLW: Are we out of tapes?

HKS: Well, we're down to two.

FLW: Okay, well I'll move. It think deforestation has served a purpose of getting the public's attention, and yet so much so that our new institute here in the press release is being dedicated to solve the problem of tropical deforestation. That's in the title of the press release. And we're all chagrined by it, we don't like it because we don't think that's a way of judging what we do. I'm sure that people that are better paid than we are have decided that that's what we have to say, and that's what they are saying. What I think is we ought to really fight deforestation on steep lands, on swamps, on lands where quite obviously there is no

agricultural potential afterward that is going to be a real wreck. And shift deforestation, we must continue the lands where there is an agricultural potential. And in many countries, like Brazil of course, in the Congo, there are lands. We know in the hills of Puerto Rico we have produced crops twenty-five years continuously using fertilizers, the same kind of land as the Amazon. So it can be done. But the environmental people don't like using fertilizers, and their arguments to me are not very valid. Because any farm who uses enough just to feed a stream or a reservoir is wasting fertilizer, that's not the way to apply it. And you can correct that, it costs him more money and he doesn't get it out of it, and so I think there are a lot to be said about fertilizers. In fact, I at one time, thought that if we took a bunch shiploads from Wilmington and dumped fertilizer along the Amazon just in piles, and turned around and came back, that finally people would notice everything is green around that pile and try it, and once Brazil got hooked on fertilizer we'd stop sending it and they'd make their own, because they've got a lot materials.

HKS: Phosphates or whatever it takes.

FLW: Pete, you and I are not natives where live. We are an import. Isn't it good ecology to import what it takes us to keep us alive? I mean why should we pillage what happens to be and assume that we deserve that and shouldn't enrich it? I don't understand this, its not ecology to me. Well, anyway. The public concern about deforestation keeps coming up in questions such some you ask, and what can we do about it. I welcome that because of course it means people have opened their minds to international problems, and many of them are young people that might chase after this rainbow and see if they can't do something about it. I feel that those of us who are aware of it mostly, had not done a good job of segregating opportunities and there are a lot of places where they are burning in Brazil, or places like that, that I wouldn't go to try to stop it. Let it run its course there, let's try to figure out what these people will do when they finish. Set up some kind of agriculture processing industry or a community or something, so that there is landing field at the end of this siege. Worse still, go on to the sloping lands, learn how to rehabilitate them, use those people to do it, and maybe find a cycle that you can work some of those lands. I don't think its impossible. There are things I think we don't want to use tildes culture, we don't want use tree crops, there are lots of things. Malaysia has a rubber background that goes into years and years. They use ground covers underneath them, they have loading control, they use very fertilizer. Not every crop is a tree crop, but oil palms are, and oil palms could be used for almost anything. You can have grazing underneath, grass. I'm not an agriculturist, I'm making it sound simple. But I know this, that the agronomist of the tropics are trained in modern technology, if at all, and their penchant is not to go back and sleep in some shack in the hills, work with shifting cultivators. Its to go down to the flat and fly over with a plane and drop fertilizer and insecticides. That is the exercise of the profession, just like we prefer Douglas fir to mesquite. Its that kind of thing.

I'm not sure about the arid versus the humid tropics.

HKS: It may not be a legitimate topic.

FLW: Well, there's something to say there. About half the tropics are classified as arid, and the people that are in the arid regions think they are neglected, think they have been butchered. Civilization has been happiest in the middle where its somewhat humid, not terribly humid, and they do have a dry season. Almost all the tropics has that relationship.

HKS: In the environmental literature the Sahel of Africa gets a lot of publicity, and all of the famines taking place there.

FLW: Well its an area where its very critical because a slight change in productivity. As you get toward the dry side the rains are more fickle, not only are they less, they are less reliable, so you can have two or three bad years and your population has being growing, we've seen to that. Its like the Mayans, you're running on your luck a lot of the time and then in the Sahel they've had this. And there is no question as to what the Sahara has migrated southward, there's a lot of good evidence of that. In West Africa a lot of the people use wood for fuel, and this has been one of the problems because fuel wood harvesting is total. Its not selective usually. They leave nothing, and then you have goats which kind of knock out all the spouts.

HKS: You were saying yesterday or maybe the day before about the charcoal production was significant in the national forest here in Puerto Rico. Why isn't charcoal used in Africa? Is that a technology that is beyond them?

FLW: It is. Well, {benwins 90}, for example, that are in the Sahara, for some reason they disdain charcoal, they have to wood. And in Ghana there are trucks traveling 400 miles north from the forest on the coast in the interior bringing fuel wood to the branchwood and that kind of stuff. I find that ridiculous because charcoal has about 70 percent of the fuel value of wood, and of course, its so much lighter and less bulky and you could make briquettes which would be even still more concentrated. And one truck would take maybe three or four times as much.

HKS: This has its cultural problems, too.

FLW: We use charcoal in the city, but wood in the country. Charcoal is more expensive per unit of fuel. But in the city its cleaner and fits the kitchen, and you don't have to have a big pile out in the back.

HKS: The transportation costs must be enormous, and so it would actually be cheaper to use charcoal.

FLW: That's right. I assume there is something Islamic about this, you blame that if you can't blame anything else. I think that's probably something to do with. As for public concern, we're letting the environmental people take the ball and run with it as to what the tropical problems are. And seen from my perspective, the worlds is absolutely full of Johnny-come-lately experts about the tropics that are talking down to the general public as people who know about the tropics, when maybe what they had was OTS course in Costa Rica or something. Somebody ought to talk with them. There are not enough people, maybe, to redo much. I think there is a danger that we're going to get the temperate zone figuring well they are stewing in those juice, if these guys are that stupid. Why do we keep on trying to subsidize the problem? That could very well happen. And so I think the public concern is there, I think its ripe to tell the story the way it should be. I'm not sure I know the story as well as it should be. But I sense that over reading the newspapers, the New York Times, all kinds of places, almost always has a real bias to it. This Chico Mendez that was killed in Brazil, you remember the big story, and they made him practically a hero, and for all I know he was a hero, I don't know that he wasn't. But its a measure of how much we make out of fragments, when there is such a bigger picture out in front of us, it seems like maybe it doesn't lend itself to such {131} if you'd like it. I could conceive that the Smithsonian exhibit on tropical forest, which is going around the country still, was good because it showed how the people lived in the forest. They needed it, they had to have all the use that they made of it. It showed how they deforested for agriculture. It showed what the timber industry did, but it didn't blame anybody. It indicated that the population was growing, more land was needed, and so forth. It did not challenge the Brazilian government or anybody else as being part of the problem. It showed how we got into this situation. And it was logic to it just like the logic of cutting off the Wisconsin, there was logic to that at the time. None of us if we had lived in would have probably been very critical of it. It was making houses, settling the west.

HKS: Clear the land for farming.

FLW: Correct, potatoes. Yes, that was it. But going back to this arid and humid. Most people think of the tropics as the humid.

HKS: That's right, Tarzan and all this.

FLW: Monkeys hanging from trees and stuff. That is where a lot of the potential is, its where a lot of the problem is. I think in the Arab tropics there is just as big a job to do because the forest is so much more fragile there in terms of disappearing entirely. The word fragile has been used for things that I don't think are very fragile. That is if you went into a humid forest and cut if off and you come back and you come back three years later you wouldn't say that forest is fragile, for God's sake you couldn't kill it. Its back up, you can't even walk through it. You do that in the tundra and a century later you'll see the tracks from where you went. That's what I call fragile. The people that call it fragile mean to produce exactly what you had before. Its make up of hundreds of species, so for them all the juxtapose exactly as the same as before would take

centuries. But I'm satisfied morphologically with a mass of trees, even though they happen to be different species and different mixes, that to me is lack of fragility. I mean I think you really are actually very responsive to recovery.

HKS: I can't remember, a European has been writing to me about a study, a bibliographic study. He talks about we need a study of temperate forests, because he said that the deforestation of Siberia, he says, will be more of an ecologic disaster worldwide than the deforestation of the Amazon. He didn't provide any backup, but he was concerned that there was so much focus on the tropics that people are not worrying about the boreal forests. SAF and CIF are meeting in Anchorage in 1994, a whole program devoted to boreal forests as opposed to this tropical stuff. I don't know, the cancer people are complaining that AIDs is getting all the money. I don't know what the jealousies here are.

FLW: I guess that the only response to that is that the tropics is not getting much money. I wouldn't be surprised that what there wasn't some truth in what is being said. The Canadians, the big papermills well up north of the border, and as they approach the tree line they get back to black spruce, and my God, I've seen the growth rinds on that. I really wonder if catalyst forestry is all in provincial lands, not federal, and mostly publicly owned. I wouldn't be a bit surprised but what U.S. companies like international paper and all the others are operating on a scale that they can't sustain. I don't know. This is as yet hugh. And they bring stuff by water, which is alright. There is a lot of wood in Canada, and so maybe its a long time off. I hope that issue that you mentioned comes up in Alaska.

HKS: Its the theme of the 1994 meeting.

FLW: Well I hope the 1994 meeting doesn't completely leave out the tropics either. They will probably have a section about it.

HKS: Probably technical sessions, but mostly boreal forests. Around the world, they are bringing Scandinavia, Russia, Siberia.

FLW: Tropics and the Third World. I don't know exactly what that means.

HKS: There may not be anything to say.

FLW: One thing about it that FAO classification of countries has developed or is developing centralize, the Russians used to be called centralized, planning or something. I've always used figures for what looked to me like tropical and the third interchangeably when it was matter of percents or approximates, millions of this, you know. And I think its fairly valid. The one area that's kind of borderline is the Middle East. FAO generally separates that out as Egypt.

HKS: How about Northern Australia, is that?

FLW: Northern Australia is certainly tropical. Its forestry is almost always identified by state. So if you have Brisbane, its tropical. But New South Wales and Tasmania and those are not. But when you have a national figure you don't know what to do about it. Mexico is the same way and so is India. But otherwise. And Argentina I don't even use their figures because its a tiny area they have. I think that tropics and the third world all one can say about is they are nearly congruent. There are people, I think, who would say that it is because of the tropics. I remember a fellow by the name of Peabody who was anthropologist years ago talking about the tropics, said that what's wrong there is that you don't have save for the winter, and people's philosophy has not preservation dimension in it because you reach out there is a banana ripe today just like there was yesterday and the ocean keeps on knocking waves, and the whole of life is interminable, and unchanged.

HKS: Doesn't {Shively 230} say the Mayan civilization, sounds like a European answer to me, I don't know.

FLW: I'm not sure that's it, but I do know that people here go out for breakfast to get the bread. There are elements of no winter, no saving wood for the winter. That is quite clear here and the idea of life insurance,

the idea of putting money in the bank, it takes a little harder doing than it used to than where I was in Chicago, it seems like. That's one of the things.

HKS: You've mentioned technology transfer many times.

FLW: I don't particularly like the term. I think that we must transfer much more than technology. And usually it's transferring something else of oneself, that has to proceed the transfer of technology. Because sitting down with a group of students and saying that well this is the way you manage a forest is less effective than sitting down with the students and saying well where are you from and what have you been doing, you know, eventually getting so that everybody is warm in a group. Then you sit around and you start talking and this kind of thing. I believe we treat technology transfer very formally. And as a research organization, thinking not only of ITF but of Forest Service and others, we dignify it with special people doing it full time until you get to a kind of George does it, I don't have to attitude on the part of people for whom its only a part-time job, not a full-time job. And I sense in some of the most intense researchers a disdain for it, a feeling that if they have to go to a meeting its at the expense of something much more important that they would be doing. And by the same token they are poor at it. I mean they don't reach out for people very much. And I think that technology transfer from foresters, as we can think of hundreds examples in the U.S., has been inadequately done. We're not appreciated for things for which I think we deserve appreciation, and many of us like myself, I left the city for the trees, and it was almost just that. I felt much more at home in the forest than I did in society. I wasn't very social in school, in fact Michigan ran it so we had field work every afternoon so we really didn't mix with other schools and things. And I think many of the foresters that I know who are slowest to accept social forestry, agroforestry, the kinds of broadening of social sciences are ones who did as I did. They went into it because they were introverts, or didn't particularly like interpersonal relationships, they didn't feel good at it. And it served as ill in the present setting. And so technology transfer is something we formalize, whereas I think its something that should be in our blood. Its like the women's program we have, I think taking care of women ought not to be a thing apart, it ought to be every day everywhere. We have no men's program at all. But technology transfer, I would like to see, and not being facetious, for the Forest Service to spend about half of its time and money on forms of technology transfer. Even though that's more than we should in the long run. To meet the society that we're dealing with, to become a part of it, to be on the inside in the press and radio and television in more ways, and not just to have Smokey walking around. This isn't my field, as I say. I'm doing it because I get rewards from it. I really like to see people respond and they can. I delight in taking young people into the forest and showing them things that it isn't just a mass of trees or a jungle, here's one that's a friend, here's one that's not so friendly, and here's one that does this and here's one that does that. Because I enjoy that, I mean I always felt that I liked the forest by the degree I knew about it inside. That isn't necessarily peddling research information, some of it is. Lugo feels, I think, that my technology transfer ought to have its origin in the findings of our research. And if I limited myself to that I would have trouble holding the audiences because much of our research is kind of esoteric and not of public interest, generally. Its searching for something behind the scenes that most people can't figure out why we would do it anyway. Well maybe that's the problem, we ought to show them why. Most people don't want to know that much about us, and you have people with a shallow interest and I think you ought to satiate that shallow interest with no apologies for going no deeper. But if somebody comes in and wants more we should give it to them. I do know that technology transfer tends to be an either or with research in the sense that if you're really going out there is so much need for it that it can steal your time. Lugo has repeatedly told me don't let it take you away from research. That's an interesting viewpoint. When I think of it as a researcher's job and I don't think, I'm not in the majority with this. I think every one of us that's doing something is ineffective to the degree if it doesn't get to a practitioner and get maybe actively used or something. And yet we feel satiated with three publications a year, one the Journal of Forestry, one in Trialba, one in the silvi, we get good marks for that. You know we're preaching to the converted, mostly, in those journals. When you publish in forest science for example you are discouraged from writing it readably. That's not an exaggeration. If you use Dale Carnegie you may have trouble with your review committee because the term for this multideviated. And here you spell it all out. We know that.

HKS: We have the same problem in history. Your academic peer review chops down anything that's readable.

FLW: I'm an editor on New Voice, which is a Dutch journal, and they just sent me a brand new one on genetics and I took one of the abstracts to see if I could use it in ISTF News. And there is not a sentence without a word that I would have to look up. There are some that they put prefixes on, multipoly, you know, and then end up with something that taken apart you know the pieces and you're not sure what putting them together means. I have no doubt what the peers of the authors know, and they respect the guy for being able to use them, you know. Like peridine. I made a speech in Washington one time not so long ago in which I announced at the outset that I had just seen the charts last week that sustainable had surpassed peridine as the word of the week. I was not pleased with sustainable, but I was delighted to know that peridine had passed. I think we have a long way to go on this, research is probably the slowest one. I think national forests are doing a better job of reaching the public, per se. Vast numbers of visitors, they have public affairs people. We always formalize, like Gallow stuck her head in with the goggles on and she's our public affairs person. In this case she doesn't know Spanish. How do you practice public affairs here when you can't converse in Spanish? Well its not her fault, she shouldn't have been brought, and we should have used somebody else.

HKS: I thought the weakness in the Forest Service system was the staff life, that was the weak link in technology transfer. Research puts it out and we have these specialist, staff officers, supposedly translating for the field, but people become staff officers as a reward for good work as a district ranger or something, not because they have the subject knowledge. This was my observation back in the 60's. I don't know if there is any validity to that, but that's how I feel. People in staff positions were not technically trained to have that position.

FLW: There are certain ones like that, and of course the state and private organization takes the view that the national forest has no business dealing with the public, they are the ones that are supposed to do it. And I think that's dead wrong. But they are the ones that are supposed to be able to take these bulletins and go to the farmer and explain what it means to planting trees, sawmill, and all.

HKS: The fire control staff guy in the supervisors office does not know about physics to read an article about combustion in forest science, and that was a weakness of the staff people.

FLW: I suppose there is an answer to that, and you won't like it necessarily, but those staff jobs, I know how they come about just like you do, but I wonder if when they get into the staff position if they aren't more a coordinator than an assessor or quality. And they reach down below for that kind of help if they get it. But the research people complaint, which I think is only partially founded, is that the national forest people don't ever read anything they publish. I know there is an element of that, I think if I were a national forester there would be a lot of research stuff I wouldn't read.

HKS: Well now we get into the wild swinging about your philosophy of life and future. What's the potential of Forest Service in foreign forestry?

FLW: I feel very pleased with the assignment of the Deputy Chief. I think so far it looks as if the man that is in there is playing cards pretty carefully. It's a lot more tricky than I would have anticipated, because he had to pull people and money out from under other deputy chiefs. And maybe now Congress will be assigning him money directly, which hopefully will grow and he will be sitting at the table with both feet underneath it, and be able to call the tune. The point you made the other about 2,000 Peace Corps returnees is a strong one in my mind, whether the figures right or not. The roster that international forestry has for people came as a result of a questionnaire, not as a one to one, and I think one of the things we ought to do is to one to one it with people about foreign. Send somebody from the Washington office or the region or whatever it, to people and get more or less confidentially their talents, their interests. Quite aside from what their boss might. With the idea that little by little nationally there's transcendence of foreign forestry over our own. I don't think we are so far behind in the U.S. in forestry though, there are complaints we are in terms of conservation. The forests are holding pretty well, production is, we've got excesses of some things. The U.S. might say it's own problems are minor and if we . . .

Wadsworth,Tape 11, Side 2

FLW: Within the scope of Forest Service operations so that you aren't an unusual person if you have interests in tropical forestry, or international forestry, not tropical. But rather it turns out that at the cocktail party there are three other people that have tropical experience too, and you end up feeling pretty ordinary for having done it. The Forest Service should, I think single out its teams for the kinds, I listed at one time something like 15 different fields in which were needed abroad. I think we should find the good people in these, check their language capabilities, their interests, give them the language even though there is no job right now, just to have them on the shelf, and provide short-term assignments so the wife and kids can stay home if that's desirable, longer assignments also. But the long assignments, I see, if we're going to have a program in Mexico or Brazil put a certain number of high quality people there on a long term basis. They get their kids in schools there, they do things. And those people become practically Brazilians because they orchestrate the many we send down on short-term assignments. In research its a natural I think, because if a country has some scientists as Brazil or Mexico does, not all do, there is no reason why we can't one, invite them here to see what we're doing, go there to see what they see in problems, and pick out something jointly and offer what we can. Frequently in research its study design so that they minimize the cost and they get countries with results that can be proven. Frequently we don't ask ourselves how much is enough to make an important difference and so you take all kinds of measurements, and at the end of the study you pick a point which gives you a sharp contrast, and it may not be a wise one at all. It think we do have a great many people that are better at experimental design than we see outside. Poorly designed experiments, of the course the first problem is that they are not conclusive maybe. The second problem, and its just as equally serious almost, is that you take three or four times the data you need. And often if the data aren't carefully taken, precisely taken, a lot of its no better than none. Brisco was here and made very strong points on this and they are good. He could save people lots of money by requiring precision and a certain number where the curve flattened out and then the analysis so that you proved yes or no the differences. That kind of study we can get a country, if they are willing and interested, to start it, maybe without a person present when the installation goes in, trying five species or something on plantations. Come home, go on and do your work, and six months, 12 months later go on for another week and look in and correct any problems we can or help. I think that's not overbearing on the country, we can pick the people precisely. Its an interesting and enjoyable thing for a week or so, maybe once and awhile you'll take your wife if you can just for the fun of it. This could become almost a bonus for the right people. And I think they are there. And as I say one of the first things I think we ought to do is whether or present roster with the hundreds of people who say they are interested in these things is right or not go and confirm it and update it. I don't think that just because I know something about silviculture that should mean that my telephone rings, say well there's sixteen candidates we have for this job how do you feel about it, would you like to do it, so forth, this next month you've got to go for three weeks to such and such a place. I believe there is a much better way of carrying on this function. And we could really end up by sending our very best people out there. One of the elements of this is that the financing all be central. This is a national concern I think, its not a Wyoming concern, or Washington, or anything else. Its a U.S. concern, and therefore if your man is being taken fellow you'll get that money. You get the money for his salary while he's gone, over and above what you have. You probably can't use it for another person, but you can't bitch that we're bleeding you. As the chief now says up to two months you have to take it out of your pay. I think that's a mistake, I think Washington ought to withhold a national kitty for this kind of thing so that it becomes not a negative thing that comes over the hill to the immediate supervisor. That's one of the things. There is a need I see, when AID contracts the University of Montana to do something in Paraguay, no Forest Service people are involved except to approve their proposals. We don't help them find people. Washington takes the view that is their job under the contract, they've got to pick up their team. In fact their team is presented as one of the proponents and we judge who has the best team of people to go and do the job. Well this means that our roster is sheltered from these people. It means the Forest Service people, by definition, have a conflict of interest or something and are left out. Well, how are we going to get them in if we just go and send contracts to body shops, to universities, to foundations and then don't suggest our own people. People keep on asking me and I say well fine, but I'm a government employee, I think they cross me off when they see this thing in Washington. I think the way for us to get aboard this program, another thing is that I have an antipathy of university programs that has come out of this because the university has done so well at getting money out of AID to send people that I thought were just kind of anybody willing to go, go out and do a job. It doesn't mean I had a better candidate, but it does mean that a lot of people who are in the scientific fields acquire omnipotence overnight by suddenly being the chief of a project in someplace and they write all kinds of things about it and

the urgency of the publish or perish environment is such that you get an awful lot of shallow stuff coming out of that. Well, what I wonder is whether we shouldn't open the door and say that almost any project that AID contracts out there shall be a Forest Service person on the staff. Well, maybe I'm {103} I don't know, but I can see it as not a conflict of interest, but rather a way of dragging our own people into the stream that's flowing. As I said we were left at the church kind of here. You are much better off as a non Forest Service agency than our own got left behind. I wouldn't be surprised but what if you looked at the distant future there would be more foresters in the tropics than in the temperate zone, that may sound extreme, merely because trees have more to offer the tropics than they do to the temperate zone I think. And as you pointed out if we ever got going with plantations, Lamero Gofari showed me an area in Brazil in Montegroso, which he said would produce the pine needs of the world. And its an area that forested, some it and some pasture, he said its just waiting there.

HKS: Jesse Helms won't approve of that because he wants North Carolina's Piedmont to be the pine capital of the world.

FLW: Well, its like we don't want the cattle to come in from Argentina. We claim its the disease, well it is the disease but its something else too. We want Texas beef. I think the Forest Service is wrong, it should be the State Department's shoulder on international forestry, generally that is they shouldn't move a wheel without us, even though we respect their privacy and the judgments of policy, international policy. Dave Harcharak got through in this farm Bill that set up the Deputy Chief authority for the Forest Service to go in and assist countries that are not on AID's list. You may know that AID has a very funny map of the world and some countries are not friends to the {129}, some countries are graduates, we don't send people. This irked us in Washington, I think, because frequently we know of good forest situations in a country but AID won't spend a nickel there. Well we got that authority, I'm not sure AID will support it, but its counter to their limitations. I don't know what the end result of that is, we all know that if the U.S. doesn't like Nicaragua we'll be pulling out of their and forestry has got to come out too. Unless you disconnect from the federal government, you could probably stay as an individual if you wanted to become a citizen or something. I think that the Forest Service must be very loyal to the State Department and AID even though we don't agree always because I want us to be their vehicle for forestry and not the University of Montana, or you know one of these F/FRED projects that comes under a body shop of some kind. There are a bunch of them lurking around in Washington that want federal money.

HKS: What was that acronym, I've heard it?

FLW: F/FRED is a farm forestry project. Brisco's working for them, its a big outfit. There's the Pan-American Development Foundation, PADF which is planting thousands, or they say millions of trees in Haiti. There are many of these outfits that survive by AID's blessing, and we have a forestry support group within AID that I assume may see all of these at our foresting, how strong their judgment determines the decision I don't know. I wouldn't say its not there. But I feel that the Forest Service must become so friendly to the State Department that there never is a question of their moving to in forestry abroad without including us and hopefully without having set the table for decisions. You know the proportion of the world that either is in forest, was in forest, or should be kind of dwarfs agriculture. It seems to me that the mere fact that we've deforested a lot of it doesn't mean that we are not going to have to reforest a lot of it. And I see the magnitude of the problem is related to the area to some degree. Well, I don't know what else to say about this.

HKS: That's fine.

FLW: With regard to number 10, I think there are two very quick forces of which you might call failures and I assume this means failures in the general sense of efforts to do something.

HKS: Something that you didn't get done that you always wanted to get done, or something that you tried and it didn't work. Failures is probably too harsh a term.

FLW: Well, but there are two sorts of things that it seems to me that are almost indicative of failure, or at least a sure prelude to failure. One of them is assuming that the technical problems are no more complex

than we already know in the temperate zone. Forestry was born in the temperate zone and tropical forestry trails it and is modifications of it primarily. The number of things that are truly new in the tropics and are never done in the temperate zone is extremely small. We are trained in temperate zone forestry generally. What we're trained in tropical forestry has a strong flavor of the temperate roots of it. So its logical for a person who is in reforestation, seed nursery, planting, all those things, go into the tropics to expect familiarity. And unfortunately there is a degree of that. There are some things that behave just like they do at home. We know of a case where Champion Fiber planted 5,000 acres of pinus ellioti in Brazil because they couldn't into Cuba to get the Cuban pine. Castro had stopped them and they couldn't get Caribbea, and they had the machines and they had the people, and they went and got the seed from the southern U.S. for planting. Two years later they redid it in a Cuban pine on the same acreage. Well, that got washed out, nobody but the stockholders ever heard I'm sure. But that's the magnitude of the kinds of things that grown up people do because they think they can bull through. We did in the states and let's do it here. For all we know that pine will do fine, but they got a frost or something. Anyway it wasn't the frost in that case, but the tree just didn't want it. Well, that's a big error people make, even people who are ecological sensitive. They tend, and I do, they all tend to simplify the forest toward the values that we want to promote as though the others could be eliminated or didn't count.

HKS: I was going to ask you question earlier, the issue of biodiversity with everything is significant as opposed to forestry which tends to look at wood fiber production.

FLW: Well biodiversity has become kind of a source of fog. Biodiversity people seem to know, there are a lot of definitions of it, but people seem to agree that its the complex of species both animals and plants above and below the surface of the soil in the forest, and I think we all feel its nice to conserve it. And in the states what I think is the rule is thou shalt not reduce the number of species on a forest, I mean a national forest, and this allows you to set aside representative parts of the national forest that assure you that no matter what you do on the rest of it you've complied with this. And we have examples here where a fairly rare orchid is found in upper branches of trees and if it became an endangered species and we fell a tree that had an orchid in it, I suppose we could take it and plant it in another one, I don't know, but we would be guilty of something. And so I'm sure that when the shakedown is final the biodiversity thing will be applied broadly and not to every acre, because if you insist on the full biodiversity of every acre you end up with a very small percent of the trees that are useful. So small that historically its been hardly economical without some big old veterans were mahogany or something that paid their way and nothing else did. The biodiversity, coming back to your question of how important it is, I'm convinced that without the animals the forest would fail in most cases. That may mean birds, may mean insects. Its not just the distribution of the seeds, its not just the pollination, it is that the animals tend to have a role in the relative dominance of all the species. Some eat the bark off one, some eat the leaves off others, and so forth. They feed the birds, that is the thing goes up through, so if you knock out an insect that you don't like the shootborer, you may knock out somebody else or change somebody else, or let them go rampant. Some other insect could take its place. So there are these dangers, but there is another light at the end of the tunnel and that is, and a fellow by the Terborgh working at Princeton, well working in Panama and in Columbia has published a number of papers on what he calls keystone species. And he takes the attitude that the system is loaded with redundancy. Many species are performing about the same function as others. And you can remove a lot of species, the Germans had the same thing, without threatening the stability of the system. And he lists in some of his publications who the keystone species are, and blessing they are all the timber species. They are the big trees, the dominance, the predominant, the emergence, not all of them. But he was dealing where he has mammals to deal with. And so I would say where we are here, we have a list of 30 species out of 175 which we like, all the rest of them would make poles and fuel if you want so they are not a waste, but these will make furniture wood or something special. Well, if we work toward saving those 30 on the timber areas, well we set aside three quarters of the forest we don't touch, so I'm not even worried about biodiversity in that area. But you have to give me a play pen in which to tend to strengthen the proportion of the trees which are usable, something that was not very strong in the original forest. That is, I think, a legitimate position there. People are arguing this, there are still people who think like {myopeues 299}, every single acre has to have all the species it every had, and those people are going to have to move to Mars.

HKS: In this context of this topic here, would a failure be in retrospect. We went out and planted sample plots 50 years ago but didn't count the animals on those plots, we only counted the trees on those plots and

put tags on them. And so it would have been more useful if we had known then what we know now, obviously.

FLW: Yes, it probably isn't a failure because as far it went it was useful. It would have been so much better to have gone further, that's what it seems to me. There are some good articles published by Whitmore and others confessing failures, or at least half done jobs that years ago they put in plots and went back themselves to measure them and ware so unhappy that they hadn't done something more. And the ecologists have come in on our old plots and asked us why we didn't put paint bands on every one so that every measurement could be in the millimeter, and we weren't measuring that precisely in those days. And others things about the plots. Whey didn't we take the bacillary around each one, and the slope, and things like that. I went back and made a study of 1400 trees through the plots, adding fixed physical things that were true when we started the plots to see what we could relate and we got some very interesting things, we're about to mess with the analysis that we're lacking on, and we have some of the analysis and we've found some interest relationships.

HKS: The Dean of the School of Environment at Duke was a botanist, and he says the problem is that foresters look up, and they put in sample plots and botanist look down at the little plants.

FLW: One of the variables we took was the ground cover and the epiphytes on the trees, lichens and that kind of thing. We're having trouble but I think that were are using a blunt pointed approach and probably isn't good enough. Speaking of failures, the second one is assuming that the peoples of Latin America are, or will be, or should be like the peoples of the temperate zone.

HKS: The same values, same priorities.

FLW: They all like ice cream but that doesn't solve it. When you're not with them they are different than when they are with you. We probably are too, somewhat different. The feeling that automatically what you don't know about them is identical with what you know about our own people is a mistake. The idea that we are not better than they are is probably one way of putting it, is not an easy one for a lot of people to accept. Why would I be out here trying to help these people if I wasn't better than that? And it may not be carried on their sleeves, but it comes out of their pores. I know a lot of people who come here will say things in English that are derogatory without being personal. A boat came in and the kids, San Juan was full of people off the boat, and a couple with a girl were walking along the San Juan streets, and the looked up and intimated the old lamps and things, and said look at that funny light there. And I know that if a Puerto Rican had heard that he would have been offended. And you know very well she didn't mean anything by it.

HKS: How much is this in real money, you have those kinds of questions when you're shopping, use of the currency.

FLW: That happens too. Well I think the successes are not very visible. One great success I know was a fellow by the name, he was from the Lake State Station, anyway, he went to Korea and he was a nurseryman. And he stayed three or four years there working with their nurseries and planting them. And he was a foreign born person on our staff at the Lake State Station years ago. And unless they have changed because of war, there's a statute of him in the plaza in one of the cities where he worked. And he was apparently a indefatigable person, insisting on getting forests on lands and work hard all the time and inspired a lot of people. That is the kind of success we have. I think a success are the people that we lose that go out and they don't come back, and they make a life of it. Generally they wouldn't do that unless there was something successful about it, they are not just exploiting the country usually. We do have a lot of retirees in Mexico I know, but I'm not talking about them, I'm thinking about people who might be Peace Corps who never come back. Maybe they become vagabonds, some, I don't know. If you've interrelated with those people and you have what we call a good education its hard not to make a contribution of some kind. You can become a drunkard, I suppose you can. But most of those countries don't like us when we are trying to imitate them. You go and make a spectacle of yourself at a party or a dance. Everybody drinks here so I always get drunk sort of thing. You find out you're the drunkest of the people that are there. In Paraguay I found that when the hippies were joining the Peace Corps that they stopped them at the bridge. They had a long beard. The women they thought were all second class women or they wouldn't have sent them out that.

There own women they would never send abroad alone. These are the depths of genuine differences that aren't going to go away. I think these are lessons that new people have a hard time learning. I remember again a group in Iowa State, those people, this is all new to them. I think it is to most of them. Its basic. I don't think we can show a success of sustainable forestry in the rain forest. We, the British, anybody. I'm sure there were plantations that were relatively sustainable, sustainable as anything in the temperate zone. And we had some very promising forestry in the rain forest in Africa and in Malaysia. And you couldn't prove it wasn't sustainable on what we knew, but it didn't go long enough. So we knew it was going to be sustainable. What we did here was sustainable, certainly as long as we did it, but we've had a hiatus now without cutting for quite awhile and that's not a fair judge if you want to call it sustainable yield. Surinam began a very good program, wrote a book about it a Dutchman that went there, and it looked very good. They were thrown out for {prudenance . . . putting 450} and they ended their book by being hopeful and saying well it looks like its going work. They had people work to that or something. I suppose one could asked are you an optimist or a pessimist about all this. And its just so complex and so multidimensional that its very hard to give a general answer. If I weren't optimistic I suppose I wouldn't have stay, I could have done other things. I could have gone back to Michigan and taught silviculture I think, and I think I would have enjoyed it. The feeling that you get on an occasional assignment where those people that you dealt with, however low they are in the echelon respected you, listened, and you thought of them as human beings--I don't get in the states anymore. I don't feel that kind thing. I suppose its there, certainly in the rural populations and all this. I've repeatedly said I'm liked better abroad than I am at home. I think maybe I'm more sensitive to it, maybe I try harder abroad, I don't know. But I think many Peace Corps people that wanted to stay out are the ones that did best might echo that, they might say that that's true, we're cold here, and if you don't make money you're not liked. You know all this kind of thing. I find right here in Puerto Rico that there is such a social hierarchy at which I'm at the lowest pit, as an outsider kind of. . .
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®PN¯ ¯ ®LS2¯ ®FL¯ Wadsworth, Tape 12, Side 1, December 1992

FLW: I think there may be world {005} running it. I think there may be some fairly good examples of U.S. performance abroad in the paper companies in south Brazil, I guess. Alden Matthes and West Virginia Pulp and Paper. They picked an area where the rainfalls are constant enough throughout the year so they can plant twelve months of the year. They are using loblolly pine with which great familiarity. It is much more rapid growing, around 50 percent faster. They know how to handle the seed, out produce the nurseries, and their employment with the exception of two or three top people is all Brazilian. The market is all Brazil. It is a town that is practically dependent on one of these plants for employment. You might say that this will be a success. Brazil has never taken action against these people. They have been so integrated from the outset by a wise early man I remember who went there, he died young, but he started the nursery program and he learned Portuguese perfectly, and he was a real good guy. I don't think we have made any successes out of forestry schools. I'm not sure how big a criticism that is. You would assume that many of our institutions would have picked out another forestry school and had a lot of back and forth faculty students, library, communications. There has been some of this but not much. My feeling is that there is not many good forestry schools in Latin America, for example. There's one in Balvina, Chile the Germans have pulled up and stayed with. Brazil alleges it has something like 40 schools. I think they are all institutions with a broader scope, maybe with a fragmentary part is forestry.

HKS: They tend to be part of agriculture the way it is in the U.S. or does it tend to be part of the school of natural resources? Or is there a model?

FLW: I think agriculture is the way I'm thinking. The natural resources breadth is common there. There is one in San Palo that the school if almost all technology is said in Spanish which is wood. They have done some very good research on wood, they have had people that did physical mechanical testing, identifications, and stuff like this over a long. They are the experts for southern South America, I think, there. I think that's an area where there may be something more looked at, and could well be a place for federal funds to foster school to school. Maybe in this very breadth of natural resources is the place to do it.

HKS: I was just thinking there are exchange programs routinely now with universities in Europe. But in literature and history and those sorts of things. You're suggesting a program north and south.

FLW: It seems to me that its hard to argue against universities as being a well head of quality forestry. I now after you get out awhile you don't give the school credit for everything you do, but you get a real push there. If the school is poor and mediocrity is good enough for the rest of your life, that's the way it often works out. I wouldn't be surprised that what some of the schools, Chapingo in Mexico has a five year course to Bachelor in. It sounds good, and the curriculum sounds good. Mexico and Chile, I think have more as we would define them, trained professional foresters in other countries. Brazil has some but its a very different school, I don't know how good they are. But I talked to a professor from Chapingo just a few weeks ago and I could tell from what he said, he's in silviculture--my field, and I could tell that he wants to bring his students here because he feels he doesn't have much to offer. Well, I'm not sure we do either, but we're dealing with this thing. I don't think our faculties would admit that if it were true. What I wonder is whether maybe a mission from the U.S. of educators, two or three experts or people who are retired educators, John Gordan, anybody, might visit several of the schools down there and come back and report on likely candidates for training or something. And then AID offered to universities in the states the opportunity to have money for faculty and student interchange. The idea that all of these institutions would be up to date and have good libraries, their teaching would cease to be this reading off notes. Its broader than forestry and we might do something about it. We haven't made a success in Puerto Rico, this is one of the things that might qualify under this heading. We've been here since 1903, the U.S. took the initiative to set aside the national forest without Puerto Rico who had nothing to say because it was federal land. But didn't man it, if that word is still legal until 1917, at the insistence of outside forces in Puerto Rico. We protected it, and that's a big thing. We were instrumental in the state forest system, which in a crowded island is also a big thing. No other country in Latin America has this, so that physically you would say we're on top of the most difficult things to accomplish elsewhere. From the protection standpoint management has been pretty good. We've gotten rid of something like 400 families that were living on the forest lands we acquired, by a variety of means that did not produce a revolution. Trees have come back on it, we've planted up every acre so that there is no bare land left in all this area, which is 40 percent of the island. These are the pluses. But we had a chief come here one time and he said take me to the nearest private land owner that is using some of your advice, or following something you're doing on the national forest. He stopped us cold.

HKS: Which chief was that?

FLW: Back a while.

HKS: Watts, McArdle, Cliff, McGuire?

FLW: Watts it was. He also showed that our dry forest had been hit by goats and a historic past. None of us believed it when he told us. After he was gone we found out. And he had been in the west and he said well it isn't a {problem? 112} but you have a lack of balance between your larger shrubs and your lower, there's something been here eating this stuff. There aren't any goats, there haven't been. But up to 1920 there were. Anyway. We have not created in the national forest an exemplary Latin run piece of land. It has many things going for it, it has great diversity of resources, it has high human demand, it has a nice bunch of trees, its all forested. But if we do this thing I'm proposing to bring the people into discuss administration, we're going to have to preach some things we're not practicing or open up the subjects we haven't really dealt with. But our real failure is that the state forest service was never treated equally when we were together. It was never groomed for separation, just like the colonial war we didn't anticipate it. They were cut loose in a competitive government in which they went to the bottom of the heap in agriculture. And it has now one professional forester, Trinidad has 27, Trinidad is half is big as we are. Jamaica has about 10. It doesn't have management plans, it doesn't have people on the forest who can answer technical questions, and if we bring the people here to show them how to do it we can't hide the state forest service. We can't explain why its no better. We can't explain why its so different from ours in terms that are acceptable. I've been a part of it, I was the director for a long time when we were together. And I think if one had to put one reason behind it its culture.

HKS: Isn't it some sort of deficiency perhaps in the vision of Region 8's state and private forestry program? I'm not sure of the jurisdiction, but it would strike me today that they have to be very concerned, they have special programs going here. I'm not sure I understand what state and private forestry does.

FLW: You're right. We didn't always have state and private forestry. It was a long period in which we were all doing the same things, managing the public forest and we were distributing trees through the extension services. That you would have expected us to, we broke apart, continued along pretty well. Well the state is not as rich as the federal government, and of course it doesn't have the breadth of the staff in Atlanta to bring forth new concepts and to push things. So that doesn't automatically work. The things we did were quite clearly not, and I think I was aware, that we were doing what I would call cutting them loose. And so you didn't have really a very, you knowingly were in effect throwing them to the dogs. And we have taken some of their people which I'm not sure is a mistake. I think what's worse is that with all we've done on the national forest the cabinet of this government and the legislature is totally ignorant on the forest, I'd say totally. They have some soft spot for conservation, whatever they call it and so forth. We had a program on television last night showing the UFO's coming down on Avionki, and they had pictures of the forests. There's a lot of people talking about it. We are not even considered as a part of that equation. The people that were interviewed were not Forest Service people, they were people who said they saw some lights at night. Some people went up there with shotguns and stayed all night, expecting people to show up and all that kind of thing. That's peddled and the public believes it. I mean there are a lot of people who ask us, well what do you know about all this? They leave our conversation still convinced that there is something there. We know nothing about it. I know a couple of things that are kind of suspicious and are funny, but if I were Martian I'm not sure I'd drop down in a mule camp, I'd go somewhere else. That's a measure of how far down you might say forestry is in a place where we've been working now since 1917. And I don't think of anywhere in the states of some of things I've said would apply. Even in the states that had a weak forest department or something. They have fire, they have reforestation or something, almost always a rallying ground of some kind, a need that produces a nucleus of people called forestry. I would assume that in Louisiana the public generally would believe it was right to have a forest department, that they had a function, that they were useful. I hope so, I think so. And I don't say people here all say its wrong. But the money it gets is almost fortuitous because the new Department of Natural Resources cut it way down. It was by far the richest when we moved in, and its been cut down just unilaterally. I assume to provide balance with other resources like wildlife that had almost nothing. Unfortunately the term management, I think ecologist are partly to blame for this or our environmentalist, management is used to describe protection. And a great many proposals come in for grants, saying managers are waiting for this information or that it is a study of management. And they are not talking about modifying the forest in any way. I just feel if you're managing it for birds like the parrot you would certainly contemplate modifying it in their behalf if you can. Until you know how you don't. You protect it. We all learn in school protection is 90 percent of forestry. They were talking about fire. I believe that protection is first and foremost, but you still have to accept that in a lot of areas pure nature is not the optimum for us. We're part of nature.

HKS: Well, what pure nature is, just because its that way now doesn't mean that's the way its always been or always will be.

FLW: Yeah, and when they say the forest is non-renewable what they mean is that time isn't passed enough so that climate and soil are enough different so that starting you'll never get what we have now when it finally matures because the time ahead is different from the time behind. That's true but its a vital thought. What's the difference. Who want's to necessarily preserve and freeze what we have. Maybe in the redwoods, it isn't happening there either is it. Groves are going out, others are gradually coming up I guess, I hope. Anyway, I think Puerto Rico, I'm being harsh here because I'm part of it, but I don't look upon it though as if I've wasted my efforts because one doesn't know would have happened if you hadn't been here always. I think maybe that the one thing that may be most lasting that characterizes my stay here is the young people that I worked with. And a lot of them are not foresters and never will be, but they go back to experiences we had, they talk to me about them. I really feel that its, in a lot of ways its been a beginning of conservation and concern. I think I saved Mona Island by the reports we got out, and now they are not touching that, its protected because we wrote and showed all the things that were there that were wonderful. And a lot of people went there and saw it, and like it. There's a danger of becoming a Cancun with a hotel or something sometime, except there's no water there. And if they ever develop water I'm afraid they are going to make it just golf

courses and beach type of place which would be a big tragedy, but maybe it won't. But anyway, those kinds of things. My opinion has always been when people said well isn't it too late, Puerto Rico messed up, you've only got one percent of the island is virgin and so forth. My feeling is that it never is too late and the later it is the more prospect there is of some change and more desperate the common person feels when the water turns off and you don't get any more, there's just no place to go that's any fun, the scenery is destroyed indiscriminately. Common people, when they begin to complain, it seems to me that it starts up by maybe cleaning up the beaches or slowing up some of the destruction. We lose a lot along the way but maybe the end product is all we would get anyway because people just don't identify with problems until they come home and roost on them. And that is a painful process for anybody that sees what's being lost. When you're dealing with a country that has poverty, you know that you're addressing only a very small group when you talk of intangibles. I don't mean that the women live out on the country didn't like flowers, they all plant flowers around their homes in that aesthetic sense, and they probably like some things about the rural life. But boy when it came to getting the kids into school and retirement ages and so forth they moved to the city and they don't even remember. And they look upon it as the big time when they washed clothes in the river, and it rained all the time. You know, all the things that destroyed any hope of any romance about the countryside. We do have a movement here interestingly, which is to cut billboards out to the country. They've risen up and they've even taken down. The government has taken them down and charged the owners of the land. People like Marlboro would come in and put them in and pay the farmer so much per month for having it there, it was a good deal. Well, there's a law against it within 500 meters of the road or something. And two or three times citizens have risen up and gotten the government to go there and they tell the people to take them down in such and such a time and if you don't, and a lot of times the government had to go and take them down. And they charge the people. This is a mild spark of discipline in the middle of what seems like no concern. And its good. There are a few. And there have been challenges. One of them is advertising an environmentalist who is running for office, they picked that one out.

Well I don't know what else to comment on, except that I think the transfer that is happening now, we think, more of the decision making away from Washington to Hawaii and here, for outreach things, and maybe to some of the other stations and regions. Sounds good and seen from here we think its probably an improvement, we're going to have a lot of proposals from all over come to us for grants we going to have to have more help on to do. I hope it doesn't produce a lot of chiefdoms that are not coordinated peddling U.S. policy. I think that's one of the virtues of having centralization on this, that the State Department and the Forest Service I feel have got to have a very strong bridge. And I'm sure they complain about us the kind of way we complain about them. There are a lot of differences that always occur. But none of them are worth walking off. It's got to continue. I have hopes that our first Deputy Chief will set a good pattern, he'll find good people to follow him. The Forest Service is not producing candidates for deputy chief in our careers, anyway, because we don't have an international element to our program. I assume the heir apparent probably at the moment is Dave Harcharak, and we understood that Jeff Suriman has two years to his earliest retirement time. But something was said to me in Washington suggesting he might stay on awhile, he likes his job.

HKS: He certainly was almost poetic in Richmond, making tracks in fresh snow, best job in the world.

FLW: I heard that, and I'm glad to see if. Because you pick a man that age and he might just ride out to retirement and not do much you know. I think that was a good sign. I miss something in that speech, and its important, and I don't know how to interpret that. He said absolutely nothing as though anybody else was in the field. And much of the U.S. forest system has been very wined as to the fact that we're new boys on the block, and Europe has been doing this for a long time now. Colonial empires and all the rest. And they've crossed a lot of bridges that we haven't. I find myself in their presence a good listener because most of them have lots of experience and they burn their bridges in times when we are about to do it. We go into a country without a full history of what others have been doing there and what's worse, what others are doing there. And we create this situation I described where maybe different donors are assisting different bureaucrats in the government, each playing his own cards as best he can to create his own empire, and the opposite of coordination thing it was because that breeds the chance that something else will get away from you. And I think we find a kindred spirit and we prepared to just roar ahead indefinitely without asking questions about that. And I think it must make us very unpopular with some other donors. It may have been at the roots of the problem of the tropical forest action plan which was to bring order out of chaos among the donors by

having the countries list the projects they were interested in, and the donors picking up one or more of them. Rather than just going in and saying this is what we'll do for you and if you want it here's money, so they accept it. This wasn't their priority at all. And maybe its a good idea. Its like these roads and things that the World Bank got criticized for. I suspect the germ of that was in very few minds and maybe some of them were foreign. Like building a Pan-American highway, let's close the darrein gap, its 90 miles, and we can all then drive all the way to Teriflava. U.S. money has been waiting for that. Panama doesn't want it. And how long they can hold out I don't know. You wonder why they hold out. They have their reasons. Its an Indian reservation and the Indians are going to shoot anybody that goes through there, that's one of the reasons. They are afraid of hoof and mouth disease. All kinds of things. We're all guilty of this because I think we think we're so much richer than other people. Certainly what we propose to do nobody else would do or is doing. And probably no body else has ever tried it and so we roar in and do our thing and I think it must be really suboptimum to the country. And I think a great many other donors which are more and more frugal can provide part of their program and not the rest, and we could be a catalyst by coming in to the gaps, you know by supplementing, doing joint things much more than we do. In Panama the Mission was closed mouthed about FAO and other groups. Didn't talk about them. I just feel that here is a pride problem here that we want our stuff to show out and be our own, show the Panamanian people how much we really care. In Paraguay I saw the Paraguayans see through us, although they weren't bitter but they did think it was a mixed blessing. They saw some advantages to us to helping them. I think we ought to accept that. My boy was criticized in school for telling the teacher that there was no act that wasn't selfish. And the teacher brought out the Peace Corps. And he said those people in the Peace Corps, and he had a brother that went and he went because he wanted to and he got something out of it. If he helped somebody else that was good too. But he wouldn't have gone if he wasn't going to get something out it. The teacher ridiculed him and said you're mistaken, there are a lot of altruistic people in the world. And he died, but until he died he thought that everything you do is selfish. Maybe not bad, but you do it because you want to. You want to because you get something from it. I think he was right. I guess that's enough of a sermon for you.

HKS: When you see the transcript if you have additional thoughts you can add them at that time. We will certainly allow for it.

FLW: I don't know maybe something will occur to me. I don't think they are going to want a whole lot of examples from anything because that can burden it with things.

HKS: Much of what you have discussed over the previous two days are the successes, the things that happened, we've moved ahead.

FLW: Its true, its hard to distill down making sharp lines. If it were simple we would all agree as to what to do and what not to do and nobody does agree and its really because your experiences and my experiences are enough different so that we come up with different conclusions. I know that if I go out with another so called expert like I did in Panama that there will be surprises for both of us.