BIOGRAPHICAL SUMMARY: William “Bill” Peter Haus

William “Bill” Peter Haus was born on August 21st, 1953, in Boston, Massachusetts. He studied marine biology at Union College and arrived in Hawai‘i on Kamehameha Day, June 11th, 1978. He started his career in Hawai‘i working at the Waikīkī Aquarium, followed by three years with the Division of Forest and Wildlife from 1989-1992 in the Natural Area Reserve System program. In 1993, he moved to Maui to work as a bio technician at Haleakalā. He retired in 2021, following an illustrious thirty-year career with Haleakalā National Park.

Bill Haus at Haleakalā National Park

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ORAL HISTORY INTERVIEW
with
William "Bill" Haus (BH)
February 18, 2021
Via Zoom
Interviewed by Alana Kanahele (AK)

AK: Okay, great. So I guess just to begin with could you give me your full name and when and where you were born?

BH: Okay, my name is William Peter Haus, sometimes people call me Bill. But let's see, I was born in Boston, Massachusetts on August 21st, 1953; so I'm an East Coast person.

AK: When did you make your way over to Hawaiʻi?

BH: I made it to Hawaiʻi in July---actually June 11th, 1978. I remember it very well, I didn't know Kamehameha Day existed back then. I came over to Hawaiʻi to volunteer for the Waikīkī Aquarium as a summer job; somebody was supposed to pick me up at the airport—I forget maybe it was a Monday—and nobody showed up. I had a bicycle with me and I guess a backpack and a little suitcase and so I just decided to take my bicycle and bike to Waikīkī—it was nighttime.

I got on Nimitz Highway and this cab driver pulls over and says "Hey brah, where you going?"

And I said "Well, I'm going to Waikīkī Aquarium."

And he says, "Not that way you aren't."

So he stopped. We took the bicycle and everything out of it and off of it into his cab trunk. And he took me to the Waikīkī Aquarium.

And I said, "Well, how much do I owe you?"

And he said "Nothing brah, welcome to Hawaiʻi."

So that was my first experience of showing up in Hawaiʻi on Kamehameha Day. It was a holiday for everybody else and so nobody was there to pick me up. So about two hours later after I'd watched a volleyball game going on next door, this guy taps me on the shoulder and he says "Are you Bill?"

And I said, "Yes."

He replied "So you must be hungry."

And it was my mentor for that summer job. So I had a very interesting arrival to Hawaiʻi.

AK: Wow, it sounds like it. How old were you then?

BH: I was twenty-five years old. And the reason I made it all the way to Hawaiʻi is because there was the blizzard of 1978 in New England and it was a very bad event for most people. I don't know if you listen to the news lately, but they're having another blizzard now over there. And I said, that's it, I've had it. No more, no more blizzards for me. I want a summer. I want endless summer. So, somehow I get the job over in Hawaiʻi as a volunteer. Well, that's another story. But I did get the job through family connections to come out to Hawaiʻi.

AK: And I think that's a good segue. I was going to ask if you mind telling me a little bit about your family or your parents and any connections they may have had to Hawaiʻi or Haleakalā National Park?

BH: Well, I guess it starts with my Godfather in Illinois, a minister, and he knew a marine biologist in Hawaiʻi named Jack Randall, who worked at the Bishop Museum and since I was studying marine biology in college, Union College on the East Coast, they said, "Well, you know, why don't you just write a letter to them and see what happens?"

And so, I wrote a letter to Jack Randall, and he passed it on to Dr. Leighton Taylor at the Waikīkī Aquarium and Dr. Leighton Taylor wrote back and said, "Yes, if you're willing to stay in a foxhole." He called it a foxhole – it was like a little apartment that was like a box. "You know, you can, you can, you have the job. You can come over here."

So, I did. And my room was a box. It was it was over a shark tank and had no windows except for looking at the sharks swimming by. So, I was I was basically an aquarium person. Aquarist. So, I guess because of my godfather connection in Illinois, that's how I come to Hawaiʻi.

AK: Thank you. Can you talk a little bit about your first time to Haleakalā after arriving on Oʻahu?

BH: I showed up at Haleakalā, per say in 1980 as a tourist, as a malihini. Never been to the crater at all. I was coming from Oʻahu with a bunch of friends, and they had never been to the crater either. We were coming from sea level from Oʻahu and as we ascended up the mountain it got colder and colder and colder, and then we got to the top in the parking lot, HVC [Haleakalā Visitor Center], it was like pouring rain, sideways rain and forty-five degrees, and I couldn't believe that I was cold. I couldn't believe this was, you know, worse than New England and this is what I tried to get away from, you know, so we left the trailhead, we left Sliding Sands trailhead in a blizzard basically, sideways rain. Going down Sliding Sands trail we can't see a thing, and we're supposed to have camping permits at Hōlua Cabin.

We made it to Hōlua Cabin almost that afternoon, and this lady comes out of her little cabin and says, "If you have some matches, you can stay here for free."

So, we had dry matches and we got to stay in the cabin that night instead of camping out. So that was a blessing. The next morning it was like nothing happened and was perfectly blue sky. I had my first view of the crater. Basically, coming down to Hōlua Cabin it was all ten-foot visibility. So that was my first trip into the crater and then and then we ended up going down Kaupō Gap all the way to the ocean. So, it was quite an eventful trip. But I had no idea that I'd be working you know, ten-fifteen years later in the park at all, it was just a visit.

AK: Had you visited on any subsequent trips before you started working there?

BH: Lets' see 1980, I believe no. No, I think that was it. Yeah, up until about 1992 or 1993? That's a good question.

AK: When did you start to work or get involved in the Park?

BH: Ninety-two, ninety-three, yeah, that was the only trip. It's the one I recall. I think that's the only one.

AK: And so when did you start actually getting involved with the park, either as a volunteer or in a more official capacity?

BH: Well, I was working on Oʻahu for three years with the division of Forest and Wildlife from 1989-1992 in the NARS program, which is the Natural Area Reserve System. It had just started up under Wayne Gagne's guidance and it was a new program. Normally, Division of Forest and Wildlife maintains trails and builds things, but to have an umbrella where an organization would take care of natural resources was kind of unusual. So, I was part of that. Long story short, but I got the job by climbing Mount Kaʻala on Oʻahu. One spring afternoon somebody at the top of the mountain—we're eating our lunch in in the parking lot at the top of an FAA [Federal Aviation Administration] road that comes up on one side and we're eating lunch there—and this guy comes out of the mist dressed in yellow slicker—he looks like a Maine lobsterman—and he says, "Which one of you guys wants a job?"

And I said, "Well, I'm just doing odd jobs now," so I raise my hand.

And he says "Okay, I'll talk to you, I'll write your number down and I'll talk to you in about two months," and so he disappears into the mist.

And I said to myself, "That's probably a mirage that never happened."

So, three months later, I get this call and it's Dave Smith of the Division of Forest and Wildlife and he offered me a job as a contractor to build a fence around the place that I was actually at the lunch spot at Mount Kaʻala. So, I was going to fence the boardwalk that encompassed a really small little rainforest up there to keep the pigs out. I was going to build this fence with another person, and that was my first job with the Division of

Forest and Wildlife. So, I think it's ironic that where I got the job, I actually ended up working to build that fence, right? So, I work there for three years, we have to take care of Pahole Natural Area Reserve, Ka'ena Point, and Mount Ka'ala of course. And so that was my conservation biology background; that's where I got my hands on experience.

And three years later Patti Welton had become part of my life and she had gotten a job, too, as a botanist at Haleakalā that year before in 1992. So, I lasted one more year until 1993, where I got a job offer from Steve Anderson to work for the park as a bio technician for Haleakalā National Park. So, in 1993, I moved over to Maui and started my job at Haleakalā.

AK: Thank you. Who are some of the staff you worked with at that time when you first moved over to the park?

BH: Well, in terms of my coworkers, there was one person named Larry Olney who was hired with me. And then Patti Welton was also part of my crew. So, there was a three of us there. I have a little piece of paper here that says who the crews were at what time of the year. So in 1993 it says we had Mark Defly, Dan Graham and Larry Olney, so there's about five of us starting out in 1993, and our supervisor, Steve Anderson, he was the project leader. So, we took orders from him and back then, we did a lot of trips into the valley. That was our main focus. And we'll get into that later, but yeah, so that who I was working with.

AK: Thank you. What were some of the roles you had as a bio technician in the Park and sort of your initial years there?

BH: I would say I would break up my time at the park into three decades, basically, so three ten-year periods. So, the first ten years, we were pretty much laying the groundwork for active resource management, in Kīpahulu Valley. So, the people that had come before me, had already built the fences, so Kīpahulu Valley was fenced already. We had to maintain those fences. So, we would walk the fence lines and then did repairs where we had to, but that was done on a regular basis. And then, because at that time, Kīpahulu Valley was so pristine, we were pretty much controlling how much weeds and where the weeds would be. So, for example, Hilo grass. This grass is very popular or very common on the Big Island. They have very small seeds on them and in the Valley we had this area where we would not go above where the Hilo grass was. And so, if we were going to go into the Valley, we would start at a higher camp and go down to a lower camp so that we wouldn't spread weeds to a higher elevation. So that would go with Hilo grass, but then later on we had to tackle clidemia and so we had to go to clidemia-free zones first before we went to clidemia zones. So, our purpose was to keep weed control at a controllable level. So, after the fence was maintained, we went after the weeds that we thought were the most invasive in the Valley—so that would be our Kīpahulu Valley trips. In terms of the crater, we had several weeds there we were controlling, we had blackberry by Palikū we did a lot of that control back in the 90s. The divisions would get together. The feral animal control people and the endangered species control people would get together with the vegetation management and we would do nēnē surveys at least once a year. So that

was a big get together – all the cabins in the crater – that was a highlight for the years in the first decade. So what's another question?

AK: I guess just a follow up. I know you mentioned clidemia and Hilo grass, were those the two main invasive species in Kīpahulu Valley at that time?

BH: No, the three main species we went after was first of all, clidemia. Clidemia had never been discovered in the Valley and Patti was one of the first ones (she'll tell you later), but she was one of the first ones to find it, find this plant, and it just set off alarms everywhere by the resource management people that were controlling the programs. So that was their main focus. Then it was Kahili ginger. There was a huge wall of it by basically, Ginger Camp, I don't know who's going to explain how many camps are in the valley or if you already know, do not know that yet at all?

AK: I don't. I was going to put a map up and during some subsequent questions maybe we can talk about certain areas that you were involved with and that sort of thing to make it a little bit easier to see it visually.

BH: Okay, so if you want to know what the three majors, there was kahili ginger, there was clidemia, there was strawberry guava and tibouchina. Those are the four we went after. Later on, we went after angiopteris and did I say Australian tree fern? Okay, so those were later on. So, you if you think of each trip into the valley as an expedition, we had our orders that we were going to go after this weed or this project. So, every trip had meaning to it. Maybe it was even just checking the fence.

AK: Thank you. Can you talk about some other projects you were involved with during that first decade you were there?

BH: Yeah, in the first decade we were also trying to restore Kaupō Gap, at least the eastern part of the gap, to a koa shrubland or koa forest and shrubland beneath it. So a major effort in Kaupō was to get rid of the alien grasses, specifically molasses grass and kikuyu grass. And we found out that if we got rid of the kikuyu grass - and this was herbicidal control - the seed bank was underneath the kikuyu grass and it popped up. So we would use the koa trees that were there as a matrix and then as the as the kikuyu grass turned brown and bare ground was exposed, the seeds would germinate and we'd get pilo, ʻaʻaliʻi and kōlea that would come back by itself. So that was back in 1997. There was an effort to restore Kaupō gap.

AK: And I'm sorry you said kukui grass or what type of grass?

BH: Kikuyu (pennisetum clandestinum) but I think it changes its genus to sancrus I think.

BH: So that was one focus of Kaupō, front country was pine control. Have you been up to the crater recently?

AK: About three or four years ago.

BH: Okay the road from the main road Crater Road and Hosmer Campground Road, if you can imagine that all was giant pine trees. It just looked like a forest, you know, thirty to fifty-foot tall pine trees, those were all cut down between 1993 and 1999. So there was major pine control in the front country – big, big pines to get rid of seed sources. Another major thing back then was blackberry in the front country. We went we went after blackberry. There is a eucalyptus grove at about 8,500 feet and we wanted to make sure those eucalyptus wouldn't escape out of the gulch, so we did a lot of eucalyptus control then; gorse control in some specific areas in the park too. We did a lot of that control as well. So that all started in the 1990s, continued into the 2000s, and continued into the 2010s in the next decade. So a lot of the project we started in the 1990s continued on to the next decade. But in terms of Kīpahulu Valley that that went through several stages and I'll get to those later.

AK: Thank you. Was there any community outreach involved with these programs or projects or was it mainly done by internal staff?

BH: The big projects were done internally, but when it when it came to like small pine removal control programs, we brought in the school kids, college kids, high school kids, they were brought on board as volunteers. That would happen on a monthly basis, I guess.

AK: And that was for vegetation management, like weeding?

BH: Yeah, weeding. Later on, in 2010s and beyond we brought them into the greenhouse to actually propagate plants. I forgot to mention that in the 1990s we had several greenhouses set up in the Valley as well to grow in situ, to grow plants in situ. And then I would plant them when they were old enough, when they were mature enough. So by location, we had one greenhouse at Ginger Camp and one at Delta Camp that was built in the 1990s.

AK: Thank you.

BH: Yeah, I don't want to get back to Kīpahulu Valley because I could just go on.

AK: Well, I think we would we could end [the interview] talking about Kīpahulu since I know you mentioned that was important to you.

BH: In the front country it was on a day-to-day basis, we would have a slew of weeds that we would go after. I can go through 1993 to 2002 and we pretty much had a different crew every year, almost. You know, we had our three: Patti, me and Larry for three years. Then there was Patti, me, and Rick Perry for another three years and then we had a big stint from 1998 to 2003 where we actually had maybe five people that were there for a while. So, we've had a lot of crews come by, come through, but it seems like Patti and I have been the only ones that lasted from the beginning.

AK: Thank you. If you're okay with it, I might go ahead and share sort of a map that I have of the park and maybe you can talk through some of them. I have a couple of different maps. I was going to maybe start with this one.

BH: That's my backyard right there.

AK: Oh, good.

BH: So, okay, just put your pointer somewhere and I'll start talking.

AK: All right, well, let's we can talk with Kīpahulu area if you'd like. Okay, let's start here. I think this is a map of all of the fencing. Yeah, well, I think you can start with some key features of the park that maybe you'd like to highlight first or areas you were working on in the first part of your career?

BH: Yeah, the first decade. Remember I said we did a lot of fence maintenance. I could say that I walked every single one of the major fence lines in the first decade. I touched every single part of that red [line]. You know, from Kilohana to Haupaʻakea to Haleakalā Peak, down Kaupō Gap, across Kaupō Gap, up Kuiki, in back of Palikū, grasslands, Hāna Peak. I've done fence inspections down from Hosmer to Hāna Peak, Hanakauhi to Kalapawili that was all done in the first decade. And then in terms of Kīpahulu Valley, of course, we walked Charlie Fence we walked Fern Fence, Kamakani Fence, I've done that. I wasn't really involved in the lower stuff by ʻOheʻo that was more Hanky's stuff right there, Alaenui. So, in the first ten years you can say I've touched every fence line there.

AK: Wow, and that was mainly to do fence repair?

BH: Yeah that would be fence maintenance. So, if we found a hole in the fence or we found a gap in the fence and it eroded away—there would be a stash nearby and we'd have our tools with us—and we would either clip it to the fence or we would have our hog rings with us, so we could actually patch it up. Mostly in the really wet areas where there's a lot of erosion. After each storm, if there was a major storm, we'd always go back to Kīpahulu valley and make sure that there were no koa trees down and no ʻōhiʻa trees down. So that kind of fence maintenance, you know, like after every storm, there could have been a downfall.

AK: Thank you, can you talk a little bit about kind of the fence design? I know there was a lot of factors that went into it for pigs and mongoose.

Yeah, as I understood it - and I wasn't involved in the in the beginning process – but the idea was to divide Kīpahulu Valley especially into three parts. Three sections, you had the upper pristine part that would go down from like grasslands to about a 4,700-foot level (that's Charlie Fence that's called Unit A), and so that was that was pristine. From Charlie Fence up has always been pristine.

And then from Charlie Fence down to Fern Camp, the mid zone, it was sort of like, this is where the war zone was. This is where things are happening. This is where the pigs would come in or the weeds would come in, but past Charlie Fence, that was supposed to be pristine: no weeds, no pigs, no nothing. So, when I joined on in 1993, they had just removed the last pig from above Charlie fence. There were still pigs between Charlie Fence and Fern Camp so we did some alien plant control. There were actually snares and whatnot, but not that much. So, there was a period there where even by Fern Camp, it was pristine enough and we just got rid of clidemia, ginger and Aussie ferns; pigs weren't really a problem there. That sort of happened in waves. If there was a problem, it got solved by our management.

So in terms of the fences, you have Charlie, Fern and then right down here that's called Gaging Station Fence and that from there on up to Fern was pretty much No Man's Land. We knew pigs were there but we couldn't do anything with them – so it was just being taken over, even the weeds had taken over, too. So we consider that No Man's Land. So our focus is mainly above Fern Camp fence and then making sure nothing gets past Charlie [Fence].

AK: And what was kind of vegetation like an up in Charlie?

BH: It varies. If you go up to West Camp. Do you have the campsites on here?

AK: No.

BH: Well, West Camp is 6,300-feet elevation. It would be right if you put that pointer right about the middle.

AK: Was it near the nēnē pen?

BH: No, a little more over to the left in the Valley though. More up. . . . Stop, there, that's West Camp. Okay, so from West Camp and around that, you have closed ʻōhiʻa canopy, meaning there's very little light coming through and we called it "Walking on Silver Dollars" because the ʻōhiʻa leaf litter would be so thick that you would look down on the ground and there would just be all these ohia leaves that looked like silver dollars. And the soil is very thick, so it's spongy and it reminded me of a mainland New England forest or a temperate forest in New England because you had the leaf litter on the bottom and then closed canopy on top and nothing in the middle – very open. That's very unusual for Kīpahulu Valley to have openness. As you would find out working there for twenty years. The further down you get by Charlie Camp, you have more open ʻōhiʻa, more mixed vegetation and ferns, tons and tons and tons of ferns that makes it impassable to go ten feet. If you could go across the valley in a day, you're doing good and that's only like one kilometer wide.

AK: And when you were working, were you staying mainly at Charlie Camp and West Camp when you were in those areas?

BH: What happened in the first decade and beyond until we built a camp at Ohe Camp? We would stay at Delta Camp which is halfway between Fern Camp and Charlie, so it would be right about there. Yeah, and you can see by the topography there's a stream there that's Palikea stream. Delta Falls was very was a very famous landmark for us it was just a beautiful waterfall that we thought we were the only ones could see it because it was inaccessible. We would stay at Delta Camp, Ginger Camp and we would stay at Fern camp, so there was the trifecta right there. Charlie Camp and Palikea Camp were special. We didn't need to do much stuff there except for the fence line in the first decade. Later on, when weeds started moving around, we had a problem with Kahili ginger at Palikea camp, we'd have to go there a lot. Or if there was a problem, we'd go to Ginger Camp for Kahili ginger there as well. The upper camps were not gone to very often.

AK: And is this pink line the trail to get up to the Camps?

BH: I don't think so. No, that's a boundary line of some kind. When we started out, there were very, very few trails in Kīpahulu Valley—when I started out. They were basically bouncing off US Fish and Wildlife transects that were already in the Valley and were created before I showed up, maybe even in 1992 they made them. They were basically just straight lines down from an elevation and going Mauka-Makai. There's US Fish and Wildlife transect number 17, there's U.S. Fish and Wildlife transect 16, there's U.S. Fish and Wildlife 15, and those three were in the Valley. After that, in the next decade, like 2000 to 2010, we crisscrossed the valley with our own trails so that we could access certain vegetation management areas easily.

AK: Are there any features within Kīpahulu or within the park in particular that really stand out to you?

BH: Well, in the valley we have these certain landmarks that if you talk to anybody who's been in the valley, they'll just say, “End of the World” – Hanky [Legario "Hanky" Eharis] showed me that. Delta Falls, Lava Bridge, Puka Moa (a lava tube). I mean, these are all little little sayings we had and you wouldn't know anything about it unless you'd been there. So there was like this Kīpahulu language that we had for special spots but in terms of special areas, anything above Charlie Camp all the way to West Camp was absolutely beautiful, absolutely gorgeous. There was areas off of Transect 17, you could go and visit an area where gunnera petaloidea would grow over your head and normally it only grows on cliff faces. And there's one area I forget which transect area—every Fish and Wildlife Transect had a station number on it—and before GPS that was our our road map. Every station was one hundred fifty-six meters apart from each other. So if we had the map of the stations we could tell where we were on the map. And transect 17 was from one to seventy-two, so there were seventy-two stations coming from pretty much the grasslands all the way down to Bravo Camp and Bravo Camp is about two thousand feet [elevation]. That's Bravo fence right here.

(Temporary Technical Difficulties)

BH: I just made you smaller. I touched my own screen.

AK: Would you like me to try to reshare and share again?

BH: No, my home screen has gotten smaller. Let's see, fit to window? No, that's not it. It's on my end. I got it. Oh, I even got it full screen. Okay, now it's even it's even bigger. Okay, so where were we?

AK: We were just talking about Bravo Camp down here.

BH: Oh, yeah. So Bravo Camp would be. . . . I wish you had the transects labelled on here.

AK: Shucks, I'll maybe ask for that in the future.

BH: Yeah, okay, if you hover your pointer along the ridge we call the Koukouʻai, it would be the western part of the valley. More up towards Kaʻapahu. Okay, see that ridge, that's the brown, okay, all those contour lines, that's the Koukouʻai and the Koukouʻai goes all the way down to the ocean. But ʻōpelu right there, that's what Bravo Camp is, or used to be.

AK: Okay. On the Kaupō side.

BH: That [referring to Bravo Camp] was taken out in the third decade.

AK: And while you were there, were there any land acquisitions that you were aware of? I know over the years Haleakalā/the National Park has purchased more lands.

BH: I would say two acquisitions happened when I was there. One was Kaʻapahu in 1999, probably. We had Senator Inouye dedicate it for us at a party at a lūʻau down by Kīpahulu and ʻOheʻo, and then Nuʻu was also acquired. So those are the two acquisitions that I remember. As I learned in the history books, Kīpahulu was given to the park in 1969 as a biological reserve. And that should be noted too that Kīpahulu Valley is closed to the public, and it's listed as a scientific reserve on maps.

AK: Has it always been closed to the public or is that a more recent decision?

BH: Yes, I think so. I mean, nobody really wanted to go there anyway. As I recall in my reading, my literature research, only three expeditions have been into Kīpahulu Valley before the fences were built – I think they [the fences] were built in 1985. One was in 1945 and one 1967, and one was in 1976. So three in total – one pretty much every decade. If you are aware of this book called *Between the Wind and the Waves*, I think there is a section on Kīpahulu Valley in there that is written by Peter Matthiessen, who's a pretty good natural history author. Yeah, I think it's called *A World Between the Wind and Waves* [*A World Between Waves*] and it has a bunch of stories about Hawaiʻi. It's very, very good reading.

AK: Oh great, thank you. During your subsequent years or maybe the second two decades of your career, was most of your work still out in Kīpahulu area or in other areas?

BH: It varied. If you look at the timeline, I mean, I did record every trip I went into the valley and I have this graph that says how many trips every year and where I went. And if you look at the graph, I think the first decade we went in there, seventy-nine times and may have been more than that. And then after that, it went lower and lower, so most of the focus in the first part of the decade was Kīpahulu Valley after that it became Kaupō and the crater. Does that answer the question?

AK: Yeah, thank you.

BH: Yeah, I've been in the valley 254 times

AK: Wow.

BH: And if you consider each trip as a week because we were there for a week at a time, these weren't just like fly me in and fly me out. We would stay at these camps for a whole week. So 254 times 5, it's a lot - like five years of my life, back to back to back to back. So other than that, we would go to Kaupō for the restoration of Kaupō Gap. In the second decade, we did a restoration project inside the crater called the Māmane Restoration Project. It was Patti Welton's idea to restore māmane shrubland right by Honokahua. So, there was māmane in there, but there was a fire that happened in the crater, historically speaking, and you can see like charred trees there if you look carefully. So, the idea was that if it was there one time, let's put it back again, and so we did put a lot of māmane trees in. There was a big, huge restoration effort, which meant a lot of greenhouse work in the front country up at the top to grow the plants that we were going to put back in the wild. That was about a 10-year project, I think.

AK: Can you talk about some of the areas that you think are sort of the most critical to protect?

BH: I think the crater is pretty much taken care of thanks to goat control and pig control and really good fencing. I think the crater district is really managed enough. The front country over here was being helped by other organizations that have fences below our fence, so I think that's taken care of as well. All we have to do in the front country would be to manage the blackberry, the gorse, the eucalyptus and then I haven't mentioned the pampas grass. Pampas grass was a big deal for us too in the front country and the crater district.

But Kīpahulu Valley is a different story; it was divided into three parts for a reason. So that the Charley Fence would protect the upper pristine park and unfortunately today as I speak, I can only vouch for the fact that the upper third is pristine. The other two thirds is gone due to mismanagement and I will say that.

AK: Are there any other aspects before I stop sharing the map that you'd like to talk about in regards to places or features?

BH: Yes, one place I haven't really discussed yet is what we call the Hāna Rainforest area. If you look up at the top of map it says Greensword Bog up there, there are actually two lakes up there and one is Waiʻānapanapa and the other is Waiʻeleʻele, and a third one, if you want to be particular about it, is Wainēnē above West Camp. Not many people know that there's actually lakes in Hawaiʻi, there's not many of them, so we do have in the park district two lakes that we can talk about. We had Grasslands Camp there, we had new Greensword camp up there, and we had Smith camp there to manage those areas and those are mainly for fencing. But those areas also have really fantastic botanical treasures up there, they have the green sword that the Greensword Bog is named after. We have a lobelia gloria-montis which is this beautiful lobelia, that's tree-like like a palm that flowers in July. That's absolutely gorgeous. They have native geraniums found nowhere else in the world up there. It's a bog. It's a high altitude bog, which is very rare in Hawaiʻi. So, Hāna Rainforest has its own little charm too.

AK: And that's closed to the public, that's still within Kīpahulu Valley area?

BH: Yeah, in fact, some of the first research in Kīpahulu Valley that that was done in the 1980s before my time had to do with fencing those bogs from pigs. Some of the conservation biologists before us, or before me, that was their main focus because they didn't know if they could fence all of Kīpahulu Valley, so they said, well, you know, if we can't fence all of it, we're going to fence a little small part of it, and they called it Greensword Bog and all the bogs up there. And then they got into bigger, bigger fish and they ended up fencing all of Kīpahulu Valley. So the people before me are the winners, not me. I'm just a caretaker.

AK: Thank you. Anywhere else or any anything else you'd like to feature on this map in particular?

BH: Before the map goes away?

AK: Yes, but I can always bring it back.

BH: I guess I'm still talking about special places where botanical treasures do exist and one other one would be on the northeast flank of Haleakalā peak there is actually silverswords that grow up there on the back side of Haleakalā Peak – where Nuʻu and Haleakalā come together. . . . more towards Kaupō. Keep following that ridge up. . . . Now go towards a forty, forty-five degree angle from that spot right there. Forty-five degrees, keep going up. Stop. Right where it starts going down a slope there, it seems like there's a water source there, there is some crack in the rock where there's a spring and all these plants you would never find anywhere else grow there. Including violets, plantago and silverswords, and we found that by chance, and we were just overjoyed because it was like a gold mine.

AK: What elevation is that about?

BH: It's about 7,700 feet. The elevation of Haleakalā Peak is about 8,200 feet, which is kind of low because silverswords up at the front country grow at almost 10,000 feet at HVC [Haleakalā Visitor Center]. Yeah, so if you want to go to the third decade, I can talk about a lot of other stuff, too.

AK: Yeah, please.

BH: Okay, so in the third decade there's more outreach with the public, with school groups. And one of the big projects that we were involved in and well, still are involved in, is getting the school groups to plant silverswords on the back side of Redhill which is below the observatory. So that would be Kilohana which ends at the far left, all that right about there, and then I think we see HVC somewhere there. By HVC there's I'd say 1,000, maybe more, maybe 2,000 silverswords that have been planted by this school groups over the years – in the last five years. And if you go up there now, you can see them growing bigger and bigger and it's going to look really nice.

AK: And this is around 2010—in the third decade [of your career]?

BH: No, make it 2015 up to 2020. Yeah, the five-year period, 2015 to 2020.

AK: And these are—I know you mentioned students—would they be more high school or college students?

BH: No, this is more elementary school. Yeah, you know, we got pretty much every single elementary school on Maui to plant a silversword up there. So that's going to be a legacy in the future when those grow and the kids come back and say, you know, I planted that. So you can put the map away. There's a lot more I could say, but I need to focus.

AK: You sure? Alright then, let me stop sharing this. So I guess we can move on to... Sort of over the course of your time now that you've kind of talked about your span of time at the park, what are some of the key management concerns and issues that you've noted – the key resource management concerns and issues that you've noted over the thirty years and how have they changed?

BH: Well, I tried to hint at it a couple of seconds ago, but it's a long it's a long story and everything's sort of interrelated. Remember, we mentioned Nuʻu Valley or Nuʻu parcel that sort of took precedence over Kīpahulu Valley for a stretch, so all the resources that were supposed to go to Kīpahulu valley ended up going to Nuʻu, and so Kīpahulu got a little neglected. And when you neglect the fence over time, nature rules and that's what happened. So, the fences in Kīpahulu Valley which were once periodically checked and maintained and fixed, that wasn't happening. So, the fences got in disrepair, the pigs got in, and decided not to leave, so they're there now. My concern and a lot of people's concerns was why did that happen? Could we have stopped the Nuʻu parcel from doing its thing and then concentrate more on Kīpahulu Valley. We don't know, but the end result is we have the pigs back in Kīpahulu Valley and it seems like management is not doing anything immediately to address the problem; it's being put on the back burner

again. So, I don't know what you call it, mismanagement or what, but that's s a concern. I mean, that is my concern.

AK: Moving on to the purpose and qualities of the park section. What are some of the important purposes and qualities of the park, in your opinion, and how do you think it's changed over time or the mission of the park has changed over time? If it has. . .

BH: Yeah, I think that the park's mission is pretty much set. I don't think it's going to change. I think we have a mission statement that says this park is protecting resources for the next generation. It's what the public sees is being protected, but what the public doesn't see is not being protected. So, we can't address the public and say specifically to them – and this includes interpretive rangers—that we are managing a biological reserve that is pristine. We can't say that anymore. So as long as the public doesn't hear that, I guess they're okay, but things are going to leak out and people are going to find out that's not the case, and I think our mission is compromised because we're not doing our job.

But in terms of the park resources that the public sees—for example, the cabins, there was a time when there was unlimited supply of presto logs that could be used by visitors going into the cabins. Then over time the administration said, no, no, you can't do that anymore: you have to have lockers now, you have to have a certain amount of presto logs that can be accessed by the public each time they go in the cabins and that's changed over my time period here. The way the presto logs used to come into the park was by helicopter, now that's not the case. Now, it's more by mule. It's done by manual, not mechanized [labor], which addresses more the wilderness aspect of the park, because Haleakalā is a wilderness area, and you're supposed to have minimum mechanical affect in a wilderness area, so limited helicopter use and limited power tools. Those rules have gotten stricter, so I would say over time in managing the park resources, we've gotten stricter in how to do it.

AK: Thank you, can you also maybe comment a little bit about some of the cultural practices within the park or how you've seen Native Hawaiians utilize the park as well?

BH: Okay. This would be the last decade there was more public outreach. We were involved with/leading these school trips, school children and also maybe some high school kids, too, we take them on a cultural tour first of areas nearby where they're going to plant. For example, White hill. We would take them up White Hill and at the top of White Hill, we'd explain—and these are Hawaiian educated kids too – each one of us would have a job, like somebody would explain geology, somebody would explain archeology, and someone would explain cultural practices as well. So, I was involved in that, as well as the botanical part, we do have to explain that as well. That brought in my focus on things when I got to do cultural stuff with the school kids. So, I think in that respect, I saw that cultural practices were being utilized. I noticed over time that the interpretive people adopted more of a cultural practice in how they interpret things. Our brochure for the park went from science oriented Western thinking to Hawaiian Kumulipo, legends behind thinking, and that happened in the last decade. Personally, I never was involved in it as a job thing, it sort of happened as part of another project. It was left for the interpreters and

interpreter division to address the cultural issues. So, I can't really address that section that much.

AK: And have you noticed, I guess, sort of pivoting back to resource conservation, what have been some of the conflicts you've observed between resource conservation and recreational uses of the park?

BH: We did have a problem during my tenure there with a horseback riding company that would take tours down Sliding Sands [trail] and then go down to what they call the hitching post and back up again, and they would travel, I guess this constant road and it would erode the trail immensely and bring in weeds behind all that as well. So that was shut down. After one incident that was just too much to deal with. So that knocked that recreational activity out. There was another incidence or incidences where helicopter traffic and air traffic over the crater was getting too loud, so there was a motion to or an amendment to limit the amount of air traffic over the crater to keep the noise level down that I heard about but I wasn't involved with, so these things did happen in my in my time there.

AK: I think you answered a lot of these questions already, but what are some of the. . . . I guess in regards to some of the wilderness qualities of the park, what are some challenges that maybe you noticed in terms of trying to protect the natural quiet or clean air or the clear night sky initiative?

BH: What was the question again?

AK: What were some of the challenges in protecting these kinds of qualities of a clear night sky or clean air?

BH: I think that's more interpretation division. You know, when we go out in the crater for four our service trips, we'd be camping out and look up at the sky and, you know, at nighttime and it was amazing. So, you could touch the stars. You know, I didn't think there was any light pollution anywhere. But I know that there are certain indexes where they can't go above a certain level of light pollution to make it to make it pristine. But again, I wasn't really involved with actual monitoring of that.

AK: Were you familiar at all with any of the policies sort of surrounding scientific research in the park, whether it was botanical or terrestrial or what sort of park policies were around some of these research projects?

BH: Right. Each one of them, at least in the vegetation management team, who was going to go out and collect specimens to press and to put into an herbarium had to have a permit for collection purposes. And that was really strict on who gets them and how long they get them for and what they were required to do with that permit. Yeah, that was that was regulated and I was regulated by that.

AK: Thank you. And sort of pivoting a little bit now, again to fencing, I know you mentioned a lot of the fencing have been completed before you arrived, but what were some of the challenges of field work? I know you mentioned you had to do fence restoration or getting the materials there and fence maintenance.

BH: Well, some of this terrain where the fence was placed is very—I wouldn't call it dangerous—but you had to watch your footing and your ankles a lot. A lot of the fence and work on the south rim is probably one of the toughest walks you can do ever. I mean, you have to watch every single second you were on that fence line, the footing was uneven, the terrain was steep sometimes, you know it cut up your boots. You would go through your boots once every six months at least in the in the crater district. And back in the Valley your fence goes to a jungle, so you're basically dealing with jungle walking. So, again, you have to watch your foot and just be careful you don't get impaled by some of the stuff on the fence line as well. Just safety, you have to be really aware of your safety, and if you're in the Valley, nobody's going to get you, so, you know, you're on your own.

AK: What were some of the safety precautions that you guys had to have to take in terms of fence maintenance in some of these more remote areas?

BH: Well, eye protection, gloves, long sleeves, leather boots and of course, you got to have the right rain gear because, you know, it was mostly raining in a rainforest. Yeah, like I said before, just to be safe. And also, when you're dealing with fence materials, watch out for your neighbor, watch out for your companion or your worker, you have enough space so that you know what he's doing and you know which ones doing what. We didn't start doing what they JHA's until later, but that would be the way to go around that is to make sure everybody's on the same page before you start out what you're going to do and how you can do it.

AK: What is JHA?

BH: Job Hazard Analysis and that's been part of the parks policy for the last decade I think, more so. We're getting more safety oriented and we're getting more complicated. There used to be like little teeny outlines but now they are huge essays you have to read before you go in the field. Even to cut down a pine tree, it's like three, three pages on how to cut down a pine tree. Job hazard analysis.

AK: If you needed materials where they mainly brought in by staff on foot or by mule, or were they helicoptered in?

BH: Depending on the terrain and where it was located, the fence drops were by helicopter. I mean, the fence drops here by helicopter in the rain forest, of course and then helicopters were used in the crater as well. Yeah, so nothing done by mule, no. And Timmy Bailey was in charge; he's our fence guru. You would organize with the helicopter pilot in terms of flagging where the flagging tape was going to be and how to place the flag and cables on the ground so the helicopter could see it from the air, that kind of stuff.

AK: And I know you mentioned some of the educational programs that have come up beginning in 2015, I'm wondering if you can talk a little bit about any specific educational or outreach programs you've been involved with and what the activities entailed?

BH: Well, outreach for me would be leading volunteer groups to do pine control, so that happened on a regular basis. A school group would come up and say they want to do some alien plant control, and they would come to me and I would show them in the field how to cut down pine trees. Usually, we went up this place called Puʻu Nianiau, which is a cinder cone, just as you enter the park on the right side. Over time, I could tell when those plants would grow to a certain height, so they would be accessible for the age group I was dealing with. So, if they were big people, I'd let them grow taller and if they were small people, I'd say we've got to get them now. There was a constant pine influence every year. That was a big thing for me, is to organize pine control efforts with basically elementary and junior high school kids. Once a year, we would go and join the Maui Agricultural Festival, I think. Where all the different conservation organizations come together and show the community—the school community—what projects we were all involved in. Not that much, though, in in my life, no. I can remember decades going by and really not seeing many people because of field work.

AK: How large were some of these volunteer groups and were they mainly seasonal? Only working at certain times of the year?

BH: Yeah, I'd call them seasonal, and we've had up to thirty people or thirty kids at a time. Some of these were for out plantings for the silver swords, up to 100 kids broken into groups of twenty-five. They were pretty good size, you know, like a couple busloads at a time.

AK: And were these all-day trips?

BH: Yeah.

AK: And then I think to maybe close off, I was hoping to just ask a few reflection questions next. I was wondering how your relationship with the park has changed over time since before you worked for the park, while you're working and more recently with your retirement.

BH: Well, before I worked for the park, I just thought this was another national park. Like, you know, you do when you travel around the United States and you visit the different parks. When I got to work for the park, I realized how special place this actually was and still is. I felt that the park was my school ground, my education. I came in not really knowing that much, I mean, I knew plants on Oʻahu, because I'd been over there for many years, but coming to the national park, Haleakalā, I didn't know any of the native plants here, pretty much. So, I had to learn by doing I guess, not many people were around that knew it either. So, we learned on our own, especially in Kīpahulu Valley. So, I think of how much I've learned since I started in 1993. In fact, since I've retired, I've

looked back more on those first six or seven years that I worked for the park more than I've ever done before—sort of in reflection mode and try to encapsulate, you know, well, what really happened—what has happened. And I come up with the conclusion that I just learned so much, you know.

So the next factor was, well, if I know this much, I want to I want to teach other people too. I want to make them know that, you know, they can learn as well. So, my second role, I guess, was a teacher. Once you learn, then you have to teach, and it comes from my dad, my dad taught at MIT for fifty-three years, so I grew up with a teacher and he always said, make things simple. That's how people learn. So, I didn't realize how much impact I had by my teaching until I retired and I got all these accolades on my plaque that I received a couple of weeks ago of thanking me and how much they learned from me. I mean, I didn't really. I thought I was just doing my job, but in retrospect I was teaching people without knowing it or, you know—they acknowledge the fact that I was responsible for them learning. And then if you think back on it—and all these people that I work with—each team that came my way, they had to learn from scratch, too, so Patti and I taught them all they know, and then they went on. And so, yeah, I'd say, the stages are you start out as a student, then you become a teacher, and then I guess you're a kupuna after that.

AK: That's great. What sort of future directions would you like to see for the park, I guess, now that you're retired?

BH: Well, you know, I've got a love for Kīpahulu Valley that won't go away, and I just hope that down the road down, you know, the next couple decades – not decades – but next couple of years, I hope the focus will be more on protecting Kīpahulu Valley and getting it back to where I saw it, what it looked like before. I saw recovery in my time at the park and in the Valley, when we did have a problem with alien plants and animals, I saw it recover on its own once those were removed. And I'm thinking that once those animals are removed from the park, from Kīpahulu Valley as well, that the forest will recover as well and recover back to where it was before.

In terms of the rest of the park, I hope to see East Kaupō Gap again and see how it has, has grown over the years. So I can I can see a project that that I was responsible for and the same thing with inside the crater going back there and see what their māmane shrubland looks like in a number of years. I don't think the park's going to go away, it's right in my backyard. Which is, I'm lucky for that, so I hope to volunteer when I can and teach as well. When I do volunteer, the people allow me to do it. I don't know, I think it's just a stage I'm going to go through. I don't feel like I'm retired yet. I just feel like I'm not getting paid.

AK: Are there any final thoughts or topics that we may have missed that you'd like to cover at this point as well?

BH: There's one well, that's hard to explain. . . . I think you're only as good as your moniker, so a lot of the guys in Kīpahulu Valley know me as Cable Ridge and there's a long story behind that. . .

AK: Yeah, we have time if you'd like.

BH: You have time. . . . And it's almost it's almost a fitting conclusion, actually. We were flown. There was four of us and we were flown up to the top of Kuiki Mountain and our mission was to hike down from Kuiki on that ridge called Cable Ridge all the way down to sea level. Kuiki is the peak above the crater it's about seven to eight thousand feet tall and we expected to go down in two days from eight thousand feet down to sea level in two days. So, we had a backpack, we had our big packs on with our weather overnight gear and everything like that, and it was also a botanical survey too—check for certain species that we knew were up there. And we proceeded down the mountain and I pretty much thought we were on this expedition that would have been done in the 1940s and the 1950s when they went into this valley and we didn't know where we're going, we didn't know where we're going to end up.

So, the first day we get lost, we come down the ridge and we follow this ridge, a false Ridge, thinking it's one that's coming down that we should follow, it wasn't, so we had to back track that cost us a half a day. So, we had to bivouac in the middle of the trail – it wasn't even a trail. Bivouac on the top of the mountain and in the rain, pouring rain, so nobody got any sleep. And so the next day, we tried to speed up because we lost a lot of hours, speed back down, and we're getting to this spot where there's a strawberry guava roots on the trail. And I have about a fifty-pound pack, something like that, and my my feet get caught underneath one of those strawberry guava roots and apparently I flew off the cliff. So, I was airborne, heading down an eight hundred foot drop off. But there was a forest in front of me, so I wasn't going to hit, I wasn't going to go straight down, but I flew and I got turned upside down and landed on my back, up against two hame trees; those are my saviors. Otherwise, a little further down. . . .

And so they come down to me and say, "Are you okay?"

And I said, "Yeah, where are my skis?" I thought I had wiped out on the ski slope, so I had a little concussion going on, well, they put me back together again and I guess I was okay.

And then I get back on the trail and start walking down and we make it down to the base yard and there's this big lūʻau going on. I don't know why it's there that they're celebrating something, so there's a party going on and people are asking, "How was your trip?"

"Well, I almost died today. So, like, no, but two hame came up and saved me."

So I didn't want that day to end because I basically lived through a possible demise, and so they caught me the next morning, still awake, still dancing on this porch by the base

yard saying Cable Ridge. I was just so happy to be alive, I didn't want the day to end, and so I stayed up all night.

So I think the Valley was trying to tell me something, because that happened in 1993, so I had another thirty years ahead of me. It says “You're not going yet. We need you.”

AK: You're sticking around.

BH: You're sticking around. That's how I got my name, Cable Ridge, so it could be Bill Cable Ridge.

AK: Oh, thank you for sharing that was quite an amazing story. Thank you.

BH: Many times I've had that near-death experience, but that's one of them.

AK: Is that the only one in the park?

BH: Pretty much, yeah. I've been lucky that's another thing to, with all this walking in the jungle, you have this this fern called pohole which people eat on the Big Island, pohole salad fiddleheads. Yeah, but in Kīpahulu Valley it grows over your head - it grows six feet and taller so you can't see in front of you. So all you have is you're walking, you kind of walk down this transect, and not even a transect, just walking through the forest and you can't see ahead of you because it's over your head. So, you're just always going like this (swimming motion) like swimming back and forth like this, and you don't know what's underneath your feet and you don't know if there's branches you're going to trip over or anything like that and you end up on the ground a lot. And I didn't get injured any time in this type of terrain. So, I'm really fortunate about that.

AK: Well, it sounds like it took good care of you following that incident.

BH: It did, it has. And maybe someday they'll invite me back in on a token helicopter flight.

AK: That would be cool.

BH: To say this is what we did for you Bill.

AK: That's great. Well, thank you so much for sharing all of your knowledge and mana‘o and teaching to so many of us.

BH: Yeah, I hope you can wheedle it out. Cut here and cut there because I said a lot and some of it makes sense and some of it doesn't.

AK: It was all great and we'll be sure to send you the...we can send you a digital or a physical copy of the transcript, and if there's anything you don't want, feel free to redact and we can cut that out of it.

BH: I hope I answered all your questions okay, though.

AK: You did!

BH: I know it's a lot, but there's a story to tell.

And another thing, and I think this is what I learned as well, is everything is in the details. You know, when you start looking at things over and over again, you notice things you didn't notice before, especially being on an island, you're going to go to the same places all the time. But each time you go to that same place there's something different about it, right?

And botany is the same way. You can go look at the same plant in a different manner, and you'll find out something different. Like ferns are known by their spores design on the back and in the shape of the pinnules, the small leaves. And if you start looking at ferns more and more, then you get to see them in a different light. It just opens up more doors for you. So, look.

AK: Absolutely. Thank you so much for the opportunity to share your knowledge and botany and conservation restoration.

BH: And hopefully you interview the other people, I'll be part of the puzzle. You know, I won't be the whole puzzle, but I'll be a piece of it. That's all I want to be is a piece of the puzzle, because a lot of people are in this together or have been in this together and protecting the same resource. And I know we have the same vision and we might be saying the same thing, but at least it's your ʻohana, right? You're going to end up with a huge ʻohana when you get done with this.

AK: Yeah. And like you said, it's all in the details. Everybody has something new to add, even if a lot of the questions are similar.

BH: Yeah. I hope this helps you out. I don't know what the final results going to look like but is it going to be a book or something?

AK: We're thinking what it will likely be, so, we're going to do all of the interviews which probably will take up until about April or May, and then they'll be different uses for it. So some of it will be used to create sort of a website to showcase sort of snippets and talk about the varying perspectives on resource management and conservation and some of the themes that the questions revolved around.

BH: You're going to have you're going to have a vignette with one person saying it and then another vignette with another person saying something?

AK: Yeah. Yeah, sort of. And then we're also we're going to also kind of put everything on to ScholarSpace, which is the University of Hawaiʻi sort of digital repository. So, a lot of this will go into the Center for Oral Histories archive. It will go into the archive, but it

will also put our for the public to see as well. It won't be something that's hidden away or that you need to pay for it or anything like that.

BH: And then there will be a link to that?

AK: There will be a link to that. And we're also going to I don't know if you're familiar with [ArcGIS] StoryMaps. Yes. Yes. We're also planning to do a StoryMap similar to one we recently did in Waialua, the Waialua Ethnographic Field Study. We interviewed a lot of community members in Waialua, Oʻahu and created StoryMaps for each of them, kind of explaining their story or their time at the park. And so we'll probably do something kind of similar to that for this as well. We're still sort of figuring out how we want the end project to look and where we want to house it in terms of, do we want it on Haleakalā's website or UH's or both and that kind of thing.

BH: I just, I forgot one thing. You know how you break things into decades. Well there's a little snippet there at the end like the last three years where they stuck me in cultural resource management, which is basically archaeology. So I had this project to find old trails in the park, so historic trails, so once called the crater rim that left Olinda and went up to the crater rim, actually went through parts of the park to get there. And this is one that was used time immemorial since the Hawaiians, and then later on by the Westerners. I found it, I found snippets of this trail in the park and it was like finding a new species of plants. It was like, whoa, I hit the Holy Grail. I found it because it was historically on maps but nobody had physically gone out and been there in the field to see it. So it was like putting a puzzle together and I would find ahus that would represent where the trail went, and I would follow these ahus and connect the dots and then GPS these places and then look on the map and then draw the lines and then go out in the field and see if it works.

I found that one, the Crater Rim, and then I also found an old trail that was used by the Silver Sword Inn to get their patrons up to the crater as well to the shrublands. And that was completely taken over by the shrubland, and I had to use my feet, as you know, when I missed the rock to find the next rock, the field rock, to go through and then connect the dots. And then find actually where they built the trail out of the mountain, and that was yeah, I forgot all about that section. That was really a good way to end my tenure here is with archeology or, you know, looking at cultural sites. So, I just want to throw that in.

BH: Wow, that's incredible. During the last two years were you involved with a lot of other archeological projects at the park as well?

BH: They wanted me to clear some rock walls at ʻOheʻo that were once used for cattle guards back in the 1900s. So I had to expose those. That was more manual labor just taking weed whackers, lots of weed whackers, and clearing the vegetation off the rock walls to make them acceptable—that was that was the latter part of my tenure as well, ʻOheʻo. I thought of it more as a. . . . This is what they do with old people, they send them to clear rock walls.

AK: I was going to ask when you moved to archeology, you know, how often were you in the park or were you in an office?

BH: Well, it's half and half. I had to go out and do a lot of walking around to find these places. So, because I had GPS with me, I had to process the data back at the office. So, half and half on that. But I always liked looking at old maps, as a hobby, so this was going to be part of my hobby. You know, there's a really—if you ever get to Maui and you go to ʻUlupalakua general store—there's a big, huge map of Maui that's from 1926, it's the territory of Hawaiʻi. And a lot of the roads that we have now are not on the map, they're just called trails and they're called routes, but there's very few infrastructure on that map except for trails and plantation villages during the sugar cane era, and it's a really a snapshot of what Maui looked like back in the 1920s and before that. So that's something to look forward to if you like maps.

AK: Yeah, I'm getting my PhD in geography, so I definitely like maps!

BH: Oh, wow. That's a good one. So, let's see do you know about this geological site? I only hit it once, but it's a place where you can get old maps online, USGS? And you can you can actually go search and say Maui, and then it'll pull out all the old maps of Maui on it. And you can go to any region in the world, in the United States and it'll give you a whole list if they have or not.

AK: Yeah, I'll have to look, I may have come across it and that's very interesting.

BH: Yeah, but it does exist. There's a whole there's a whole USGS section on old maps.

AK: Oh, okay, thank you, I'll be sure to look into that. Well, I want to be respectful of your time. I know we're kind of pushing almost two hours.

BH: What time is it anyway? You know, it's been raining the whole time and now the sun finally came out and our yard here is all koa trees. We planted trees from like 20 years ago, they're about twenty-five years old now, and if I could turn this around---can I turn this around? Look, real quick. Are you still on video?

AK: I'm still on video.

BH: Okay, so I'm going to turn around and you'll see glistening koa trees.

AK: Oh, yeah. How pretty, those are big trees.

BH: Yeah, you see the glistening koa phyllodes?

AK: I can.

BH: That's just rain.

AK: Yeah, that's beautiful.

BH: That's our backyard.

AK: How lucky, Haleakalā and koa trees. Thank you so much again, and I look forward to chatting with Patti [Bill's wife] next week.

BH: When do you want to talk to Patti? She said Tuesday might be good.

AK: Okay, yeah. We can do Tuesday. I just emailed her and suggested Wednesday, but really any morning is fine with me. She just said not Monday.

BH: Yeah. Well nice talking to you and meeting you and I hope this helps a lot in your endeavor. I hope I didn't bore you.

AK: No! This was great and it really helps a lot. I look forward to going back and listening to this again and reviewing it. And when we're finished, or at least when I'm finished, doing the transcript, I'll be sure to send a digital copy and a hard copy, if you'd like as well.

BH: Okay, it seems to be a very important week for me this week, because last Thursday I got interviewed by KHON news.

AK: Oh, wow, that's awesome. You're becoming very popular after retirement. They're like now he has time.

BH: I didn't think botanists were that popular, you know, the next rock star that we have status of yet.

AK: They're like now that now that he has time, we can get him.

BH: You can get them. Yeah. So, I don't know if they repeat that stuff, but that was kind of weird to see myself on TV.

AK: Cool. I'll be sure to tune in and see if I can see it, if it already aired.

BH: It's something to do with archiving specimens. It was more like for Patti and our project, where we were trying to get these specimens to the [Bishop] museum. It was a Valentine's Day kind of thing because we worked together, we're married, and we're doing this legacy for our, you know, our histories and those plants.

AK: Yeah, how cool. And I figured I would a lot of the questions I have for her are kind of geared around that work that you guys have both been doing with the specimens and Bishop Museum. So, I'll be sure to focus on that with her as well.

BH: Yeah, good. Because we didn't mention that at all here. I don't think.

AK: Yeah.

BH: All right, it's tough to say goodbye, but maybe I'll see you on Patti's call. All right, well have a great day.

AK: You, too. And I'm glad to hear the sun’s out there.

BH: Yeah, I can go outside now.

AK: Okay. Aloha.

BH: Aloha, bye bye.

AK: Bye.