

TRANSCRIPT

INTERVIEWEE: **John Ahrns** (JA)

INTERVIEWER: David Todd (DT)

VIDEOGRAPHER: Jody Horton (JH)

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Please note that the videos include roughly 60 seconds of color bars and sound tone for technical settings at the outset of the recordings. Numbers correlated with time codes on the VHS tape copy of the interview. "Misc." refers to various off-camera conversation or background noise, unrelated to the interview.

(misc.)

DT: My name is David Todd. We're outside of Round Mountain, Texas, at Westcave Preserve. It's November 11, 2005 and we have the good fortune to be visiting with John Ahrns, who's the longtime steward of this wonderful sanctuary and student of it as well. I wanted to take this chance to thank you for spending some time with us.

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JA: Thanks.

DT: John, I was thinking that we might start by asking you a little bit about your personal history and of how you first got interested in the outdoors and conservation and natural history. Was there somebody or some incident that kind of opened your eyes? Got you intrigued?

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JA: Well, I think it was just a collection of people. My mother was big on eating outside and talking about the stars and taking us to the lakes and stuff like that. I grew up near a lake. I hunted and fished my whole life. I looked at plants and birds. Didn't really have much of an interest in them as a kid, it was just, you know, get out into nature. My oldest friends and I just, oddly, both run parks. That's kind of odd to—to have a (?) that goes back almost 50-something years, to have your oldest friend and—and

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yourself both running parks. He runs them in Wichita Falls, so he got the short end of the stick. I'm here. And of course, Scouts played a major influence, but basically, Scouts was my access to the outdoors again, it was to go camping and stuff like that. But I always had an interest in the outdoors; I always participated in any activities outside. I remember most of my field trips that went to different parks around town more than I do any of the classroom work. I was a little bored in the classroom.

DT: Can you tell about some of those field trips? Any one that stands out?

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JA: Well, we'd go to different parks. I grew up in Dallas, Texas, and there wasn't a whole lot of parkland. It's like the state of Texas, there's just not much parkland. Luckily, though, we were close enough to where we could go to different places and different lakes and—and enjoy the outdoors, do hiking, fishing. Really wasn't into birds and plants when I was a kid. I—I was a kid. And hadn't—didn't know where I was going. I—I'd honestly thought after I

bought my first Bob Dylan album that I'd be off in some social problem—solving problems here and there. But I sort of just drifted into this and been here ever since.

DT: Well, can you tell us how the route of this drift that you took...?

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JA: Well, I was looking for something to—a—a—a direction to go in. My—I had children at the time. I started working as a volunteer in parks and, of course, parks was what I've always wanted to do from the time I was ten years old, saw my first Park Service Ranger with his Smoky the Bear hat on. I said that's what I want to be. So I—m—maybe I was destined to be the—a Park Ranger, I don't know. But gradually, the reward outweighed the pay, the hard times, everything else. When I worked with children, I'd just get excited. Now, that includes adults, too. Today was—we had third

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graders out today and they all hugged me when they left and—now, after being in the same place for so long, it—it—it—it does get depressing when some student that's twelve years old comes up and says my dad was here was he was twelve. You know, you go, oh, you are getting older. But when I first moved here, it dawned on me; there was no other places around that taught how things worked. When I was a kid, I went to Missus Bayer's bread or Oak Farms Dairy or something like that. I didn't have a nature center to go. The first time I really thought about it all being connected was back in the early 60's, I read The Web of Life by John Storer, which some of it's not factual today's standards, but The Web of Life was everything was related. There wasn't something that we should just get rid of because we didn't like it; it was all part of the web. It all fit in.

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We play a game here, if we have time, with a ball of string and we throw it from the flower to the rain to the rock, to, blah, blah, blah. Pretty soon you have this big mess, but it just shows all of our—our—our students that everything is related. There is no—some things we don't particularly like. I'm not fond of ticks myself, but they have a place here just like everybody else. And our philosophy here is that we are the visitors, everybody else lives here, so just look. Just leave them alone. Includes Daddy Long Legs to snakes to whatever.

DT: Maybe you can talk a little bit...

(misc.)

DT: Well, you talked about us all being visitors here and the wildlife being the residents and I was wondering if you could talk a little bit about the history of the Westcave area and some of the early visitors here, maybe some that are prehistoric, some that were colonial times, the German settlers.

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JA: Well, the first crossing on the river wasn't until 1875. Captain Washington Hammett completed the crossing here. The old crossing came up into the mouth of Westcave and so when th—these old guys would pull their wagons up, they'd generally stop and apparently they walked up to the waterfall in the cave because they'd heard it

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was very pretty. I found a—an ant—1900 half dime, the pictographs in the cave go back to the 1870's, so people have been coming and going in and out of that cave. Prior to 1875, there probably was no reason for anyone to be over here and the reason I say that is the old road went up the river about, a—a—seven or eight miles to Dead Man's Ford and crossed there and went to Cypress Mill. Cypress Mill was founded originally by Mormons in the late

1800—in late 1850's and then they left and went to Utah and the

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Germans moved in the late 1800's and converted it to a grist and hammer mill and so the mill started back up. There's very little left of the old mill there. So the early settlement in here—I mean, the early exploration by Europeans w—probably wasn't till 1875. Now this part of Texas had human beings living in here continually for the last eight or nine thousand years. So when people say they just moved from Houston, my response is big deal. People been living here forever. They lived along the courses of the rivers. We

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have some older sites, some older kitchen middens above the canyon. Our canyon was—is a box canyon, so it's—probably would been—had been undefendable to them. The cave is a wet cave, everything you owned would rot. But it's a—the virtual grocery store of its time. You know, there's just tons to eat down there. I get spoiled on the diversity of Westcave when I go to other places and look at their canyons and then come back home and look at our canyon because it's been protected for 30 years.

DT: Well, what are some of the marks that you see of these people who've passed through or lived here in the past? You mentioned Ming and you also mentioned some of the petroglyphs.

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JA: Yeah, well, that's a generic term. It doesn't matter whether I wrote it on a mailbox last night; it's still a petroglyph—a pictograph, actually. If it's carved in rock, it's a petroglyph, if—the older stuff is not done by anybody past 1855—75. We're not looking at old rock paintings or stuff the Indians did. The closet rock paintings that I know of are some at Pedernales Falls that were probably painted 500 years ago. I really don't know.

DT: And so, say, in the mitten of, do you find any arrowhead, spear points?

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JA: Oh yeah, yeah. Spent a lifetime picking up after those folks. I've got trays of them.

There's—in our display cabinet in the visitor's center, there's a tray full of stuff I found in the area. I have not really found much on the preserve, it's too rocky, it's just not the type of place I would look for—would've looked for a site. Most of them I found at a knoll over here I knew was a good spot or where two creeks came together. Right above Westcave is a good spot. You could've gotten down in the canyon, the water would've been right there and it's a soft, grassy place. You could've seen a long way, whether it'd be another person or a deer. You know, it had a good vantage point. And, so...

DT: Wait. You said that Westcave itself was sort of a grocery store for them, for the Native Americans.

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JA: Well, I had—yeah, have—have a—a group I work with called American Youth Works and they're having a—a—a wildlife dinner, I forget the name of it, and they—he called—the guy called me up and asked me, he said what—do you have anything? And I—after I got to thinking, I've got a ton of stuff here that—and a lot of it, we probably couldn't eat, but a lot of it we can, like the walnuts and the plums and the cherries, the prickly pears. There's a lot to eat here. Pecans. So there's a lot that was seasonally

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gathered. I know a lot of Native Americans would trade pecans to the early settlers for a—a—you know, it was a trade—it was a trade good. But, I just—all I can describe in the

canyon is a big grocery store because that's what it was.

DT: I guess, many years later, after the Native Americans and the Mormons and the Germans came a lot of people who were, I guess, picnickers of various persuasions and ethnicities and I understand they did some damage to the grotto...

[Speaking at the same time]

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JA: When I first came here, down by the bridge would be, oh, I don't know, 20, 30 cars, litter everywhere. The trail was probably in the neighborhood of 15 feet wide led up into this canyon through a hole in the fence. To be honest with you, if I was out riding around and I saw that many cars in a trail, I'd have probably gone up to. The canyon was stripped of most of the plants. Everybody took a little fern with them, everybody walked in a different place, everybody left one can. Behind the waterfall was all a mineral formation people had walked on. It used to be maidenhair fern, it turned into mud.

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Inside the cave, everybody broke a little something and took home and all of this happened, I would say, between the late 1960's and the early 70's. When my generation got a hold of a car and came to college, it expanded their range. The people that came out here in the early 1900's, you had to have a lot of time and a lot of money to come this far out. My oldest story about Westcave is Guy Durest tours the hill country in his Hupmobile. And he talks about going to Hamilton Pool and Westcave on dirt roads out here in the 19-teen something or another. I found that in the Austin American Statesman. I

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been here so long and it's not only part of my job but it's part of my own personal interest is local history, so I'm habitually early for everything. So I've been into Austin public libraries and the Austin American Statesman and the Fleming Collection at UT and just poked around. And a lot of the stuff I found today probably isn't there—wouldn't be there today that I found 25 years ago. You know, the guy perhaps that I interviewed is dead, probably. It's the 18—85—19—9—yeah, he'd be dead by now.

DT: You were saying that you came here; I guess the late 60's...

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JA: No.

DT: Early 70's and you said that it was pretty littered and torn up and rutted. When did you actually come to work here and...?

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JA: It was the—the—the—I don't know, February of '74 or something like that. I negotiated a deal with—and that was one of the luckiest things I ever did in my life was meeting John Covert Watson, but John Watson hired me to—to set the reserve up. He liked the fact that we had children and we had—within—we weren't from here. And he had a vision of hiring somebody from here and then just inviting more people out. I came here and I took a look around and I said this is really beautiful spot and, you know, now what do we do with it? And luckily, none of us knew. And so I—I got to decide. And

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so I—I looked in the phone book, which has been the goldmine for me, and I found the Austin Nature Center. The only thing in town. So I called them up, said what do you guys do? And they told me and I said well, we just started a preserve, let's work together. And that was the first group I worked with. Since then, Austin has grown people wise and

organization wise. We had the wild basin, numerous community organizations from Bright Leaf Park out in North Austin to the Ladybird Johnson Wildflower Center and the Balcones Canyon Land came about the—the medium in

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between development and endangered species we had to deal with. But I always thought, and then, to this day, I believe we should always be an educational organization. Today, we offer over 400 public tours a year and we teach about 200 weekday classes for schools. So we stay pretty busy with the educational arm. That's our mission is en—environmental education and conservation.

DT: What was your first step in 1974? You called the Austin Nature Center. They're agreeable to cooperate. So what do you do then?

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JA: Well, I would start doing programs with them. That was in between picking up trash, dealing with some seriously drunk people and controlling the area, fencing it off, laying the—the—cleaning out for the new trail because there was trails all over the place. And I don't want to say that anything was really that much planned as it just sort of evolved. It wasn't my ideas, particularly. I'd look around, I'd come to your place and God, that looks terrible or, you know, I like that. And so, you know, it sort of evolved

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from stealing stuff from other people. And people have asked me about my education. You know, I—and so I tell them I mooched an education, is what I did. Doctor so and so came out and he'd answer a stupid question that I—because I asked him. He probably wouldn't answer in class. So I've—I've had the opportunity to work with some really brilliant people and learn some—the plants and the birds and the invertebrates and, you

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know, that's what it's all about is you'll never know everything that goes on. We've tried to study the major things here, but we haven't gotten into—I could have someone spend a whole year here studying just the lichen. You know, that's just one minor aspect of this preserve, but that's how diverse things are here.

DT: Well, maybe we ought to talk a little bit about the preserve...

(misc.)

DT: Why don't we talk a little bit about what the preserve is? What's drawn Indians and the Mormons and Germans and college students out here? The size of it? Tell a little bit about the geology, perhaps?

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JA: Well, the geology's pretty basic. I mean, I could do the geology tour in a few minutes, but...

DT: Please do, yes.

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JA: It's a—this is all clay—Cow Creek limestone. Now this is only about 30 feet thick and it capped the top of these canyons—I don't care if it's Hamilton Pool or Westcave or Roy Creek or Dead Man's Hole. Underneath it holding it up are two other sedimentary deposits, Hammett shale and sycamore sand. So as the river is eroding its way through the Edwards Plateau, it gets underneath the Cow Creek, it washes some of that sand and shale away and a piece breaks. It's called the collapse grotto. It wasn't a cave. A grotto's an overhang. So it kept collapsing and collapsing. Some of our

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exhibitory on the back wall shows that. It's been collapsed for about a hundred thousand years. Now it's the difference. The trees have all grown in the top—in the—in the bottom of the canyon for the sun and formed a big umbrella. So the soil in the canyon is different than this shallow, dry, clay soil. It's made of a hundred thousand years of dead trees, shrubs, leaf litter, river silt. I found a layer in the cave of river silt about this thick, the flooding was so severe thousands of years ago, probably the whole canyon was a

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deposited with this river silt. Ah. So instead of seven species of trees—they grow in the shallow, well drying soil—we have 25 species in the canyon. They've all grown to the top for sun. Here comes the c—the difference. It's August. It's 106 degrees. I walk down in the canyon and it's 88. So it's cooler in the canyon and shadier in the canyon. Diversity. I've got acorns and all sorts of stuff up here to eat. Acorns are probably the oldest meal known to man. In the canyon, though, I've got four different kinds of oak trees. Some of the acorns in the canyon are this big. A food source. I've got plum. I've got cherry. I've got American Beauty berries. I'm sure they made some sort of a sauce out of them. All sorts of food down there. Now what attracted the Indians to this area is

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they just wandered over here. They were hunters and gatherers, they were following the game. When they ex—extended the carrying capacity of a certain area of land to a certain point, they just left. What the early settlers in this part of Texas were looking at the little valleys, like across the river. That's the Hensel Sand, it's where they raise the peaches in—in Stonewall and it brought the agricultural use of this area in. Now there were already cattle here, they were escaped Castillion cattle, the Longhorns. They just roamed around. The main cash crop for Central Texas was cotton and corn. So every

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little valley was farmed with cotton and corn, that's what brought the early settlers up. Now what brought me and you up was probably it was one of the prettiest places in Texas to live and what brought me here was my kids. I wanted my kids to grow up outside of a big town and in a park. And they did.

DT: You mentioned that this limestone strata got undercut by the, I guess it'd been there, the...

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JA: River.

DT: ...the Pedernales River, can you talk a little bit about the hydrology around here that makes ...?

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JA: This—this part of Texas to th—to this day receives the heaviest rainfall of anywhere in North America. The record rainfall I came across happened in D'Hanis in 1936. It rained 22 inches in 2 hours and 45 minutes. That's a big rain. So the eastern and southern edge of the Edwards plateau are getting these massive rains from a combination of tropical storms and hurricanes off the Gulf or the collision of low pressure areas up here. This river right here set its most recent hundred-year flood in

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September of 1952. This river rose 70 feet. It took out most the trees, most the soil, most of the river bottom. So much water came down this river that Lake Travis rose 58 feet in 24

hours. Those are the kind of rains that highly dissected the southern and eastern edge of the Edwards plateau, that's why it's sort of at a sat—southeasterly tilt. It starts at Austin at about 500 feet. The older limestone, like that's Glenrose over there, and then it climbs up into the Edwards limestone, the newer limestone to about 3000 feet around El Dorado or so. Your rainfall, it gets lower the farther west you get. We average about 30

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inches, they average about 15. So the southern and eastern edge is highly dissected with the Llano, the Colorado, the Pedernales—Barton Creek dropped 1700 feet from Henley to the Town Lake. The Bl—Blanco runs in the Guadalupe and all on the southern edge, there's the Nueces, the Frio. All those are big, eroded canyons. F—for little minds like mine, you know, 50 years sounds like a long time. We're talking hundreds of millions of years and this is not a process that happens overnight. It's a process that probably took a hundred thousand years just to collapse that canyon.

DT: Do you have any springs here or signs of groundwater?

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JA: Yeah. Fifty to seventy percent of your water in all your creeks and rivers and in the Pedernales River today, being how it hasn't flooded it since, gosh, I don't know, a year, it's probably seventy percent, at least, springwater. Our canyon in Westcave's probably 100 percent springwater. Its origin is springs. And the origins of all your creeks and rivers are springs. That's why we teach how a limestone aquifer works. We show the runoff, which goes directly in. It's one source, but the main source is going to be the springs and so we und—we, hopefully, our students understand that—how they

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function, you know, the hydrology of it. And it's—we—the water cycle, we start with our kids about five years old, it's basic building blocks. By the time they're twelve, they ought to know more than their parents and that's our goal. And—and, you know, when you get kids that write you letters from college, you know, I came to the Westcave in elementary school and I decided that's what I want to do in college and you know you're having an impact.

DT: I guess part of what brings people here, besides the beautiful topography and geology and the creek and river, is all the wildlife around here. Can you talk about some of the creatures, especially some of the endangered ones? The Golden-cheeked warbler?

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JA: The—the Golden-cheeked warbler, I find in all the riparian areas along the canyon. Of course—I mean, along the river bottom. Of course, we don't inventory all of those. We do inventory the ones here on the preserve because we're part of the Balcones Canyon Land Plan. We have six nesting pair. It's not unusual for us in April and May to be sitting out here talking with one another while there's one in a tree. They're very friendly birds, they're beautiful birds. In my opinion, they ought to be our state bird. It's the only bird that only nests in Texas out of about 500 species; this is the only place in

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the world it nests. It uses the bark of the mature cedar tree to make its nest. So if nothing else, that makes every Golden-cheeked warbler in the world a native Texan, if that's of same value to someone. But—and it—it is an endangered species. The black-capped vireo, we don't have the habitat for it. We have an overpopulation of deer; the deer have overpopulated with the overgrazing. This was rolling hills with scatterings of trees and some cedar here and there. The grass fires, the thick mat of grass to keep the soil in its

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place, all kept the ash juniper, the cedar tree growing along rivers and big canyons and stuff until western expansion. And then through western expansion, the tree expanded its range and it grows everywhere. I was in the neighborhood in a helicopter here recently and I realized how overgrazed western Travis County is. And it's not something new; it's something that started 150 years ago. Took off from a ranch and got in this helicopter

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and I went—and here's the problem is the management of it, it's expensive. You and I go out and we kill ourselves and we get through and look and is that all we did? So we hire him, he's got a—a tractor. He comes out and he hands us the bill and we go, oh, my goodness, look at this bill. And so pretty soon you just can't afford to manage it. And I don't care if you're a county or the National Park Service or the LCRA. Once you get to a certain point, you can manage it with fires, but getting to that point is not easy. We did because we just have 30 acres and we plan on burning again—we haven't burned in five

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years because of us building this building. But we plan on burning in February and our objective here is to, number one, get rid of the small cedar. Some of it, we want a mosaic. But the prickly pear cactus and the (?) cactus consume tons of water and they're really hard to manage. So management is a tricky thing here. We're going to invite some of our neighbors in subdivisions that have greenbelts through them to observe how we do a controlled burn because we encourage that. That's one of the easiest ways.

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Otherwise you end up with solid cedar. Solid cedar, there goes your water quality. You have more water that runs off, less that runs off into the aquifers and what grows under a cedar break ain't real grass. It's a carriage grass so it doesn't hold soil during heavy rains, it causes more erosion. It's a vicious cycle.

DT: Well, can you help us understand how we got into this vicious cycle? I mean, is history of grazing maybe the...?

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JA: It's because my granddad told me that if there was one blade of grass left at the end of the year, I didn't put enough cattle on the land. You got to go back and understand how—the historical references of things. Now I'm not making a—a value judgment, what they did was a disgrace. They just ranched the way they were taught. And now that we have a—a—folks at A&M and folks at Texas Tech that are studying range conditions and how to manage ranches, we're getting a little better at managing our open spaces and our ranches, too. And some of this was a hard fought. Fires—when I

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first started being an advocate of fires, people thought I was crazy. What do you mean, you're going to let the place burn down? My neighbor's field caught on fire and he's moaning and groaning about the fires killed all the grass and I said well, what comes back up in this field will be much higher protein, better grass. It's probably good that it did burn. And then—and the next year, I was right. We had—but, of course, we had good rains that year. But...

DT: Why does fire have that effect?

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JA: It's a fire. You're supposed to put it out. If there's a fire, you put it out. Unless—see, back



in the old time—in the old days, they'd—sometimes they'd light fires just to watch them. And do as fire (inaudible) since beginning of time for other than to maintain a land; it was to run animals off of cliffs or slash and burn. This is the early technology. You went in, you burned everything and then you planted. And the next year, you planted the same thing. Then next year, you planted the same thing. Then you

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took all the nutrients out of the soil, so you just moved over and you burned another place. And in this country, we did it with a—a combination of livestock and controlling—suppressing grass fires, things like that. But I'm—I'm sure the Native Americans have started a—a grass fire were just trying—for something to eat.

DT: You talked a little bit about the wildlife that are flying, walking around here in this as well as some of the livestock, the goats and the cattle that have been here. Can you tell a little bit about insects, perhaps. I think before we went on tape, you had mentioned that you're starting to study butterflies.

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JA: Butterflies and damselflies and dragonflies are an area we're just now getting into cataloguing. Doctor Sweet from Texas A&M did most of our vert—invertebrates and insects and I learned a—just a world of stuff from him. We're trying to catalog everything that's here. We're only up to about 75 different butterflies here at Westcave and that sounds like a lot, but I know how many Chris Durden found on a one-mile of Barton Creek was 125. So we're missing a few. It's been interesting; we're going to

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convert all this area behind me into a butterfly garden. It's going to have some of the host plants that not only the butterflies lay their eggs on, but some of the plants that the butterflies feed on. It's been quite an experience for the other fellow that works here and I. On the weekends, we'll sit there at that desk because we greet visitors—we have public tours—and we can see the blue mistflowers and we'll see it just covered with queen butterflies, buckeyes, hairstreaks, all sorts of butterflies. We saw one a couple of weeks ago we haven't seen, we've been adding them to the list, called a long tailed

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skipper and we hadn't seen it before. But, you know, that's what makes this so interesting. Somebody says you know everything. Well, no, I sure don't and the day I know everything is the day I've gotten into the lichens. We had a lady study just one plant called a lichen on a one-meter grid on a rock wall. And she found nine and that was the day I decided I best not say I went somewhere and saw everything because I—because obviously I haven't. I must've walked by that wall a hundred thousand times and I never noticed that there were nine lichens on it until somebody pointed it out to me.

DT: Well, so this place has become not just a preserve, but it's also a study site.

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JA: Yeah.

DT: Can you tell me a little bit about...?

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JA: We've used the University of Texas, we've used Southwest Texas State, A&M, ACC, various places around the country have sent professors here. At the University of Mississippi, a gal was studying snails. The guy from the University of Ch—of Illinois is studying travertine. We've shared some travertine to see if there was some correlation to

the age in Yellowstone's travertine and ours. So we've gotten into all the disciplines. It amazes me when they all work together what you can—one site will produce for you when you have a botanist working with a biologist working with a—somebody studying  
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pollens to an anthropologist. What all the information you get out of one site. And so we're—we're trying to do that here. I think the Island of Jersey over in England, off the coast of England; they've started at the basin, worked their way up there.

DT: Well, are you just collecting a data set that has a lot of diversity in it or are you starting to see some trends?

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JA: Well, we've started to see things that moved in and things that moved out. Here's a good for instance. Twenty years ago, I didn't see porcupines. They were in Gillespie County; they hadn't moved this far west. They have now. And, see, what's the other thing that just—oh, javelina. Javelina were a western species of little peccary and they've moved in. We've had some that we—that moved out, the—just the light—a—a

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tree died and opened an area up that was historically sh—shady to a sudden light and everybody moved. You know, I don't like the light, I'm moving. So we've had things that were growing here one year and they've moved over here this year. It's because the conditions have changed a little bit. Yeah, we've tried to study everything here and anybody that wants to study things, as long as they s—go through the process of getting our stamp of approval and turning in what they studied, mushrooms or lichens or stuff

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like that. I just want to put it aside; we'll have a record of what was here. A hundred years from now, someone can go in and say well, a hundred years ago, the Blackfoot daisy grew in the uplands and now it doesn't grow there anymore. It only grows in West Texas, what happened? And the study of that may prove a—a certain change in the climate, say. Who knows? I don't.

DT: Well, is part of the interest to this place that it has a real diversity of upland and bottomland? Can you talk a little bit about the ecology?

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JA: We have two different plant communities. And we have the characteristic plant community of the Edwards Plateau region of Texas, the live oak and the ash juniper or cedar tree. We've got 45 different grasses; the soil tends to be shallow and well drained up here. Lots of limestone outcrops. Most of our moisture is due to the—the limestone outcrops and the clay in the soils loss to evaporation or it flows into the river. And then

00:36:05 - 2319

you drop into another world. You drop off into this canyon and it's leaf litter soil, 25 tree—different kinds of trees. Some of them are 125 feet tall. There's orchids, there's columbine, there's Indian turnips, there's cherry trees, there's all sorts of ferns, frogs and fish and things in the creek. It's just two worlds but we're all in the same major system called the Edwards Plateau. And so we're studying this one thing, y—you would think as long as this has been known to the university, I would've found some old plant surveys, but I have yet to come up with any. You know, I—I've looked around, thinking that

00:36:49 - 2319

someone did a survey of wildflowers or something. Hit or miss, I've found some stuff that

I'm questionable—it's questionable how accurate they were on their identification. This lady that came out with Guy Durest in the hump mobile, I found an article in the Austin American Statesmen's collection, claimed that every wildflower in Texas was in bloom that day. She might've been wrong.

(misc.)

00:37:32 - 2319

JA: Well, I will retire, but—I think. But in about a week, I'll go God, am I bored.

DT: I think you'll be back here, yeah. Should I stop here?

00:37:43 - 2319

JA: You could stop here. We're going to make a loop around these trees.

DT: Okay. Get out of the trail here.

00:37:50 - 2319

JA: Well, there's nobody here but us, I hope.

(misc.)

00:38:02 - 2319

JA: Hang out with that. See, my wife is interested in anything you can see from the car. She ain't interested in walking at all. He wants my white shirt.

(misc.)

00:38:23 - 2319

JA: I think it'll probably change, yeah. Seems to get very overcast—I mean, very shady in the canyon.

JH: Yeah, I think I'll probably be better off...

00:38:30 - 2319

JA: It's beautiful in the canyon though.

JH: Staying just in the auto mode.

DT: But you—do you usually just buzz on down or do you—are there places you'd like to stop and show us?

00:28:41 - 2319

JA: Well, what I generally do is, with my classes and with the public, is I stop here because I'm going to tell them the differences in the two ecosystems.

DT: Okay.

00:38:50 - 2319

JA: And with the public tours, I'm going to talk a little bit about the crossing. With the school classes, I don't because it's mainly natural history that we're dealing with. It just depends on the group. But with the public, we talk about the differences in the trees and how the canyon got here and then we crossing. And then went—we walk down the trail; you'll see the crossing.

DT: Well, are there some differences that you could mention that you didn't when we were sitting up at the pavilion? Between the upland and...

00:39:20 - 2319

JA: Trying to think what I said up there. Probably not.

DT: Okay.

JA: I'll think about it.

DT: All right.

00:39:28 - 2319

JA: I don't—I don't know.

(misc.)

00:39:38 - 2319

JA: The old crossing was a dirt road. Course, it's paved today. The old crossing came behind those beautiful cypress trees over there. There is a cistern over there that's—that's rocked up and that's where Captain Washington Hammet took the money. The old road went down to the rapids, came down this side of the river, came up into the mouth of Westcave and right below us is the old wagon rutted road. The first crossing on the river was just a ford. It was a shallow place. It wasn't until 1924 that they—they poured the bridge there. And what they did was they hired some of my neighbor's parent's muleskinners. And the muleskinners came down with their wagons and hauled the sand and gravel from below the rapids and then mixed it with a concrete and poured the bridge. If you slow down and look at that bridge, it's all beat up now, but you'll see

00:40:32 - 2319

pieces of quartz, pieces of travertine, all sorts of stuff in the bridge. What they did here was they poured the bridge in 1924—the first bridge on the river was poured in 1922 at Cox Crossing, the old buffalo crossing where the Pedernales hits the Colorado. And they did that in 1922 and it washed away in 1922. So the second crossing, they said well, maybe we'll move up here and they—they poured the bridge here at Hammett's Crossing. But Hammett's Crossing was built in 18—it was completed in 1875. The old

00:41:08 - 2319

road went around that knoll and up around every creek and ri—and side tributary to the other side of Dead Man's Hole and crossed it—at Dead Man's Crossing and went to Cypress Mill or to Llano or—you know, back then, that was 125 feet is how deep the river cut is. That's an obstacle and that's why people didn't come into Westcave that I know of until about 1875.

DT: Pretty inaccessible.

00:41:36 - 2319

JA: Yeah.

DT: You had said that something was buried out near these cypress trees.

00:41:40 - 2319

JA: Yeah, there's a cistern, a—a place you could gather water that's all rocked up. There's two of them. There's one there on the Norseworthy's ranch and then there's one over here on the Martin track. And the one on the Martin track is that bend in the road where the road actually made a switchback. I don't think either one are dated. Wh—again, we were studying things. We're studying salamanders years ago and so I got permission from the Boy Scouts, who used to own that, if we can mess around over there and look at. What we did was we found a—a—just a degree or two difference in the

00:42:15 - 2319

temperature. I don't know whether that was the difference, but we found salamanders over there we didn't find over here. And it's—s—some of these aquifer systems—these are all what's called (?) or local limestone aquifers. And some of them can be very, very cold, very different water. I don't know if you've ever been to Krause Springs. The first time I jumped in there, I about had a heart attack because I wasn't expecting the water to be that cold. And it comes out of the—some kind of aquifer and those are big cypress trees. They're bigger than—than these.

DT: You mentioned salamanders. Can you talk about the significance of salamanders in the

hill country?

00:42:55 - 2319

JA: Well, these are aquatic ones, they live in the springs and we didn't have any with gills on them. They're all air breathing ones; they're not like the ones you find in the Edwards Plateau. We only found, I think, two different kind here and we looked at our springs, in our pool and above the waterfall. We looked in some of the openings to—to

00:43:16 - 2319

where the springs were coming out of the rock. And I've got some—s—information on those. I've got the water quality studies for 30 something years to—now, saved it all. And then, we've been—for the last 20 years, we've been members of the Colorado River Watch—maybe 15 years. So we've got all that information.

DT: Well, I'd heard that these salamanders are sort of indicators of how clean the water is. How does that work?

00:43:45 - 2319

JA: It depends—it—well, I'd—that—those are the ones that live in the Edwards aquifer and I really don't know much about them. There's indicator plants that are indicators for air quality and water quality. I know the tradescantia, the spiderwort; they plant around nuclear power plants. It's very sensitive to radiation and they can tell if they have a problem with a leak or something. So there are indicators and the salamander, I know, is one because of the—the amount of press it gets from Austin, from Barton Springs and whatever the name of that other springs is.

DT: Okay.

00:44:24 - 2319

JA: Better walk on.

(misc.)

00:44:33 - 2319

JA: Here's an example of a—a reintroduced species. This is a Mexican fern. This is—we got to cross the river. We just didn't have any here; it's a—kind of a rare fern. It grows in Mexico, mainly, and—but there's five different genuses of ferns in this rock fracture.

(misc.)

00:45:02 - 2319

JA: And later on, I'll tell you some of my interesting stories off camera that our visitors have told me. Remind me to tell you about the fracture in the limestone. You can see the soil's getting different right off. It's made up of a lot of leaf litter, lot of fractured limestone. It used to be the—the—I patched over here. This is about the thickness of the Cow Creek limestone that went across and covered the top of this canyon. This is Cow Creek limestone.

(misc.)

DT: John, I see we're getting some fall color here. Can you tell us about that?

00:45:58 - 2319

JA: Well, you know, there's plus and minus sides to everything. A drought, boo. But this is the reason we're having such pretty colors is it hasn't rained. We've had one—the cold snap of a couple of weeks ago, it got down to thirty. That was enough to tell the trees to turn. Certain years, these'll just turn a brown and fall off, like most years in Central Texas. This year's an odd year. This year is one of the most colorful years I've seen. Must be a—a—really pretty down in places like Lost Maples because on most years, they'll turn that brown color instead of the—the red colors the maple turns.

DT: Can you talk a little bit about how Westcave changes through the seasons?

00:46:43 – 2319

JA: Not only changes through the season, it changes through the day. Westcave and Hamilton Pool, too, are both east to west facing collapsed grottos, so the morning light comes in this way and the afternoon light comes in this way. And so what you see in the morning is going to be a little different than in the afternoon. People want to photograph Westcave; it's best to come in the morning or an overcast day. And in the afternoon, behind the waterfall turns out to be a big black spot because the sun's in your face.

DT: From summer to winter, is there a pretty dramatic change that you see?

00:47:30 – 2319

JA: Oh, yeah. During the winter months, you can see all back in there because most of the plants are deciduous, they lose their leaves. Spring is a—is a green—I—I don't know—I don't know how to describe it. It's a spring green. It's—part of it, you've gone through the winter, you're waiting for something to turn. It's a beautiful green, things grow. I can watch a—a—a leaf grow over a day. I'm down here so much that if I was to put a—a—a yardstick on a leaf, I might see it noticeably grow during the day. During the spring, there's columbines and—and orchids and violets. During the summer, you

00:48:13 – 2319

notice a difference. By the time you get down here, you go whoa; this is really cool because the humidity and the cool air down here is such a relief from the hot arid uplands of ash junipers, live oaks savannahs. And then once every 20 years, we'll get a fall with the colors like this.

(misc.)

00:48:56 – 2319

JA: We're just gradually going to walk up the creek. Generally, I stop my group here. This is what Dave and I like to do with the groups. One day it dawned on me, years ago—I was about ten years old, I heard silence for the first time. All of a sudden, I'm in New Mexico and it's silent. And I go, oh, that's silence I'm hearing. You know, it's ringing, it's so quiet. And I realized that, you know, most of my students on the preserve have never heard silence. So we have three different stops to where we just stop and listen and this is one of the stops right here. You know, and I—and I say this is the deal. You get up in the morning and the alarm clock goes off. Your mom comes in and yells at

00:49:37 – 2319

you because you didn't get up. You go in the kitchen and the TV's going. So you go to your favorite park on the weekend and you got your little picnic basket and this guy has a CD that's playing. These people are laughing and you wonder how on earth a dog can bark all day and it—how often do you get to hear just silence? And to be honest with you, outside of one day in my whole life, I—it's been—I've heard exterior noises and that day was the first day in New Mexico. And I'm sitting there going, hmm, this is ringing.

00:50:11 – 2319

That's silence, isn't it? But it's an experience that a lot of our students, even our wealthier students, have never thought about before, never experienced before. A lot of our low-income students come out here and they've never been out of the ten city blocks around their house. They want to know if we built this for them. Or they'll cross the river and say you know, the water's running down there and I realized they'd never crossed anywhere but Town Lake in Austin. They'd never seen—they didn't have the experiences—the

outdoor experience. That's why I was a big supporter of McKinney  
00:50:46 - 2319

Falls Park. How many cities can you get on a city bus and go to a natural area that's a state park? Not many. And that's why I was a big supporter and why shouldn't these people who live in the low-income areas have the same opportunity to experience things that I had growing up, I took for granted?

DT: And what sort of differences do you see between privileged people who visit here and those that maybe haven't gotten exposed to all this?

00:51:14 - 2319

JA: Well, my—my favorite age group, personally, is K through fourth. And the K through fourth kids, all of them are about the same. They're all basically—and I hate to use the word polluted—so I'll use contaminated. But by the time they're in junior high, they're into a different world. By the time they're in high school, they're into a different world. College is different, of course, but I like the—the smaller groups because these are like little sponges. And I know what they—what they're picking up because I've got the pictures and I've got the letters. And I run into kids that say I was out here, do you

00:51:49 - 2319

remember me? You know, and it's 15 years ago. Well, of course, I don't remember them but I say yeah, I remember you. But, you know, their experience out here with some has stuck with them the rest of their life.

DT: What kind of questions do they ask you?

00:52:06 - 2319

JA: Oh, anything from real stupid questions to really questions I can't answer. You know, yeah, I'll have to ask somebody else. You go darn—the first thing we do is if we don't know the answer, we'll tell you. Now I don't know the answer to that. Some places will answer your question whether they know or not.

DT: Well, are there some things that just have not been resolved and aren't answerable about Westcave? As long as you've been doing this...

00:52:30 - 2319

JA: There's certain things about the way the cycles work, I can't answer you. Is this a product of too much pollution in the air, global warming? I don't know for sure. You know, I got to think that we have some impact on it. I mean, how could we not? But most of the time, there's pretty specific questions, we know the answer of. And then we get—just the questions asked. This one little boy was pulling my pants leg and I'm trying to talk to the group. You know, we do a brief at first, preserve etiquette and what the word means and this is what we're going to do today and we're going to have a ball,

00:53:08 - 2319

learn about where we live. And this guy's pulling my leg—just a minute, just a minute. So finally, after I finished my little talk, I said yes, sir. And he said today, can you show me some farmer grass? And I said well, we've got about 45 species of grass, but I don't know of one called farmer grass? I said what does it look like? And he said you know, the grass the farmer always has in his mouth. And it was all I could do to keep from laughing. I said well, I don't know how a—farmer grass, but I like KR bluestem myself.

00:53:42 - 2319

And I picked up this bluestem grass, but that was his question for the day. And he was insistent. He kept pulling on my leg. But we get all kinds of questions like that and some of

them are—are stupid and, you know, often just wanting to talk and some are, you know, I would've never thought of what the grass was the farmer had in his mouth. It's probably wheat.

(misc.)

[End of Reel 2319]

DT: Do you want me to get on your other side?

JH: Ah, if you want to. It doesn't matter.

DT: Yeah, I thought I might be in the way. Maybe you can pick up where you left off, talking about plant tricks or...

00:00:58 - 2320

JA: Well, we have a—an array of worthless plant tricks is what I call them. The point is sometimes it's easier to use a plant because you got an attention getter and sometimes it's easier to say something off the wall. I have this desire to communicate with everybody and I was having trouble with the at-risk youth and so I figured out a way to—to finally break through to them by just being off the wall. On the deck, I take the ball moss and I throw it up in the air until one of them asks me what it is, because I know one

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of them's going to ask me. And I say well, this is ball moss. I said it's (inaudible) go into this big deal, and I say the genus and species is *Tillandsia recurvata* and I know you've heard of that. And they say why? And I say well, that's the band I played in in the 60's, *Tillandsia* and the *Recurvatas*. And they'll start laughing, but what it does is it opens their mind up to asking me what that tree is or what's that bird? I get good questions after we do that. And some of the things we do here, we do just to explain things where the kid remembers something they're looking at. I can sit there and tell you the genus and specie of this tree. By the time you get back in the car, you probably forgot it. I can tell you the name of it, the common name is bald cypress, it's used because it came in contact with water real well, so they made—milled into boards and

00:02:31 - 2320

shingles. The roots probably exchange gas, they braid the creek, they put up knees in East Texas. If I tell you a bunch of interesting stuff about it, it's going to tweak your interest and you go that's a pretty interesting tree. I think I want to know some more about that. So you get home and you look it up and our—you know, we're interpreters. We're not teachers. We're here to interpret what's here and then when you go home, it'll hopefully—it'll have tweaked your interest a little bit in the geology or the bird you heard

00:03:00 - 2320

or, you know, I never thought about that butterfly landing on that plant. Or, you know, I never really looked at that bug before. And so we use certain things here. One of them is the dogwood leaf, split it in half, and I say I'm going to make half of this disappear. And so, it has this sinewy stuff in the leaves and it'll look like, from a distance, like I made it disappear and then I start talking about the vascular system. Now I could've talked about

00:03:28 - 2320

the vascular system, it had gone in one ear and out the other for most of these kids, but they'll remember the worthless plant trick. Because—and then from then on, they will—you know, everything you say, they'll stop and ask "what's the trick on this?"

DT: That's right.

00:03:49 - 2320



JA: But there's—you know, our problem here is time and, you know, we have the students generally from ten to one. And by the time we do a classroom lecture with half of them while half of them are down here and then we switch with them and eat, well, that's most of our time. I told—told the class—the teachers, a lot—a lot of times, you know, I could do the whole day on that one tree, but we don't have time. So a lot of what we do here is we pick up on what they're interested in and I'll make going into more

00:04:16 - 2320

butterflies one day. Somebody'll pick up a wing and pretty soon, I'll start talking about that. That's one of the good things that I enjoy about working here. I can ramble on—generally, I give people about ten times more information than they really wanted to know.

DT: Well, most visitors who come are students. You know, say this...

00:04:37 - 2320

JA: Yeah, to—there are—number wise, they're students.

DT: Grade school age. What's their most common question? Is there something that they seem most interested in or they're all across the board?

00:04:47 - 2320

JA: It's across the board. First off, you know, right off, I tell them this is one of the prettiest places you'll ever see and we're going to learn some useful information. It's about what grows in your backyard. I'm not going to tell you about what grows in Antarctica or Siberia because we ain't going there. But when you leave here today, you should know more about the trees in your own backyard and maybe what that bird is makes that noise. And when we stop, if you have a question, I want to answer everybody's question. If we use a word you don't understand, we know another word.

00:05:22 - 2320

And some people teach, you know, come in, this is the way it is, this is all I know. And we just interpret it. You know, it's you take it or leave it.

(misc.)

[Sounds of water running]

(misc.)

00:06:42 - 2320

JA: October of 2002, about half this pool was a sandy beach, which we'd let grow with grasses and the other half of the pool was only about six feet deep. Let me tell you, the flood of October of 2002 dug the pool out 25 feet deep, stripped everything out of this canyon. Everything in here was just white rock. The water got up into this cave and it was, ah—I never thought I would see the pool this deep. What we do here is—is I drop a stick off into that pool. That's to tell me the clarity of the water. We take our tests from

00:07:21 - 2320

that newly built walkway, that's an Eagle Scout project. We try and mix the Eagle Scout projects in and most of the work—the flat walk was done by the American YouthWorks, E-CORPS, an—a charter school that works with at-risk and anybody that wants to go to school. A great organization, they did all of our flat walk in our trail. So we try and mix everything up. I was talking to somebody about Eagle Scout projects; I'm e—eventually put a cable in that cave. There's a lot of things I really don't want to do but, you know,

00:08:01 - 2320

when you're twenty and you're jumping around, you think anybody can do this. Wait and get till you're my age and you jump around, you—you wear out. You know, people are

getting older; somebody's going to fall. And so that's why I put the footbridge in, that's why we're going to do the cable here. But I try to use native stuff, all the benches are recycled. We try and recycle the forest here and I'm not a big fan of railroad ties and concrete benches and stuff like that. I want things to be—a purpose for them is

00:08:32 – 2320

to sit down, but it doesn't have to look like a bench. The stairs do not have to look like railroad ties. So we've tried to blend in creature comforts, so to speak, and the protection of the resource at the same time. We've got to protect our resource, well, we also have to protect our visitors. I don't mind seeing our name on a nice article in the paper but I don't want to see our name in a lawsuit.

DT: Well, you had mentioned earlier—I think we were off-camera—about how you deal with snakes and, I suppose, there's scorpions or other things that aren't entirely friendly. How do you treat those animals and also explain it to the visitors?

00:09:18 – 2320

JA: Tell the same thing. You know, this is their house, we're just visitors. When you get that into your mind that, oh—that we're not—we're not here to—I heard a guy on TV saying we were here before the coyotes were here. Well, you were? The—the thing is that we are the visitors and they live here permanently, so we just—if there's a snake in the trail, we just move it. We've never had a snake strike at anybody. Scorpions, everybody's curious and we're looking at them. There's something about being with

00:09:49 – 2320

somebody that's not afraid of them where you're not afraid of them. And so a lot of the things if they saw them around their house, they might kill them. But here, they just, you know, they have a curiosity about them all of a sudden. And I learned insects basically from a friend that I met here, lives—that photographs around the world. And he wanted to know the plants so we just swap. You know, I taught him the plants, he taught me insects. Well, he was the kind that would pick up anything so I got it in my mind you could. There's a few things that'll get you. I found out the hard way.

DT: What might get you in...?

00:10:27 – 2320

JA: Well, first time I picked up a centipede with the big orange head, guess what? It hurt like crazy. That's our oldest tree; we think it's about 600 years old. Here's another good story. I was on the public tour and somebody says how old is that tree? And I said oh, it's 600 years old and bingo, this little hand raised. And I said yes, ma'am. She said well, John, I was here two years ago with my class and you said it was 600 years old. I said okay, it's about 600 years old. But what impressed me was she remembered after two years the age of that tree. If I had told her that was *Taxodium Distichum*, she

00:11:07 – 2320

wouldn't have remembered that. But she remembered the six hundred. So that was a—you know, a great thing for me to know someone was paying that much attention and had that good a memory. And...

DT: Keeping you honest.

00:11:21 – 2320

JA: Yeah. Keeps me honest. Made a good story, too. You want to walk around behind here?

DT: Please.

JH: The berries out over there.

00:11:31 – 2320

JA: That's an American Beauty berry. There I go again. American Beauty berry is a very good, xeriscape plant for shady areas. That's my main question, is I've got a shady area. I know what they're fixing to ask. That has obscure pink flowers, big leaves that turn, it likes the shade. Thirty-four species of birds feed on that one plant. I can tell when the robins co—cam—come in because there won't be any berries on there. They'll eat it first. I've got two books. One of them gives me a recipe for American Beauty berries. The other one says it will give you extreme gastric disorders. So I don't know

00:12:10 – 2320

whether it's edible or not. But it's a more of an east Texas species of plants. Most of the plants in this part of Texas are western species, but you have a blend zone that happens in these canyons. Some of them are relics from when it was cooler and wetter here, some of them have just expanded their range here and they're heading back. The American Beauty berry, the spicebush, the yaupon, the Chinquapin oak are examples of e—more of east Texas species of plants. The red bay. This is the western range of wed—red bay, as

00:12:45 – 2320

far as I know, Westcave. And there are certain species of plants in here that are host plants for butterflies, so we're going to take some of these species out the—and—but along—and put them along the visitor's center. The red bay is a host plant of the palamedes butterfly. The spice bush right here is the host plant of the spicebush swallowtail and you can smell the leaf on that. It's a member of the laurel family. Now it makes a terrible tasting medicinal tea, a diuretic tea. But the female produces red berries and the red berries can be used as a substitute for allspice. You know, during the Civil War, people used chicory instead of coffee, that's why chicory became a popular thing to add to coffee. Was during the Civil War, you were out in the middle of nowhere

00:13:37 – 2320

and you ran out of coffee, you found anything you could—that tasted like coffee. And chicory did. This—the berries taste like allspice and that's where spicebush got its name.

DT: Now earlier you were telling us about this stone wall here.

00:13:55 – 2320

JA: Travertine is the name of this formation. Travertine is a calcium carbonate formation which most of your cave formations are calcium carbonate. The difference is the plant matter. The moss, the fern, the leaves that fall in. Anything that falls in this leaves little hollow spaces. The missions in San Antonio were built in 1735 out of travertine. It's easy to cut, it's easy to mortar together, it's easy to plaster. I'm sure the little friar didn't pick it up and look at the hollow spaces and go, oh, R12. He did it because it was easy to work with. I cut our pieces out with a handsaw when I was

00:14:35 – 2320

experimenting on seeing how close together they—I could push the formation and you could see the cut. And I've shared some of the travertine with Chris Carron, he's going to carbon date it and then this fellow from the University of Illinois is studying the travertine in Yellowstone.

DT: How old do you think it is?

00:14:54 – 2320

JA: I don't know. I—I would guess—we have a guess—the outside is going to be the newest. And 5000 years old, I figure. That's just a guess. One of these days—you see that piece up

there that broke off is a piece that we've—the sample we've kept to carbon date. But this must've been a spectacular canyon when it's full of moss and fern and dripping with water. I mean, it's pretty today.

DT: Did this used to have more water running through it?

00:15:25 – 2320

JA: Oh, yeah. Five thousand years ago. That's my guess.

DT: Did the water supply shift it from this side over to that side?

00:15:32 – 2320

JA: No, it's just dried out. Just doesn't produce as much water as it used to. Why are there gri—grist mills and hammer mills along dry creeks? You think they built them there when the creek was dry? Why do you think the ranchers went to west Texas? To ranch in the desert? No, there was grass and water here. A combination of man's use, overgrazing, changed the climate. They cut down all the trees. Pretty soon, Tornea Creek dried up. Have you ever seen any water except for rain? They used to raise cotton and corn along Tornea Creek in Big Bend. So we've gone in and ourselves have changed some things. Things have just changed over thousands of years. It's a natural occurrence to go from a wetter time. I was in an archeological site down at Big Bend with some friends of mine with the Park Service and they showed me a (inaudible). That's the

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desert. They said the interesting thing was our archaeologist found a packrat mitten. Packrats only go a hundred yard circles. Everything in the packrat mitten came from a hundred yards. They found pinion seeds; they found shumard acorns. When the Native Americans lived there 5000 years ago, that was a wet climate. There were pine trees and oak trees down in the desert. They're not there today but that doesn't have anything to do with man. That was just a climate change. The changes here were all done—in the

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canyon by man and when I first came, you could look down this creek and see the river. It was so stripped. The only thing green up in here was broken glass and plastic. Behind the waterfall looked like mud. This is what I do here is I get all my students to sit down and then we have our quiet stop. And then I say you keep track and identify the species of plants on this one rock. The other day, I ended up with 19 identified. And then my question to my students is how many of these do you think we planted? And they'll say

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oh, ten, five. Oh well, the truth of the matter is we didn't plant any. We ask people not to sit here. And the reason there's 19 different species of plants on this rock because we don't sit here. That's not really high tech, is it?

DT: So this area is constantly kind of rebuilding itself.

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JA: Yeah.

DT: What do you think the climax will be? Or is it just a cycle that will continually...?

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JA: Well, this is going to be some of the climax is when we go behind the waterfall; you'll see the fern stops in a certain place. I just came across a picture of this fellow I know's great—great aunt or something. It was taken in 1900 and they were sitting right there—no, right up there. And behind the waterfall is fern all the way up to the edges of the pool. All that was stripped off by people. Now here's the problem. East to west canyon, this will not get

any direct sunlight until May and it'll only get a few hours a day. So that may be its climax stage another 30 years, it may take 50 years. Eventually, I

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expect that to grow back into solid maidenhair fern, providing our form of management lasts till next 50 years. I was talking with a friend and I said I think everything's pretty much locked in to the way we manage things for now, but who knows what your great-grandchildren might want. So I've got a conservation easement on a piece of property I own. My great-grandson may want to sell it. You know, I may the end of the conservation easement. Hopefully, two programs at—like at Westcave, where people understand how systems work will be a little more selective in our development. Growth is going to come to this area whether you like it or not. In—in my opinion, there's only two ways to grow. It's either up or out and you start to talk about up and everybody gets controversial. You know, we don't want to look at big buildings. Okay, so you move

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out. Well, nobody wants you to move out, either. So there's a lot of things to understand how systems work that, yeah, we can move out, but not here. We have to move out over here because this is—there's something sensitive over here and this isn't quite as sensitive. In—in my opinion, the whole world's sensitive, whether we build over prime farmland east of Austin or over the recharge to some of the finest water in the world is, you know, which is the best to build on? The prime farmland or the place that recharges

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your water? Those are the decisions that are gon—somebody's going to have to make. Luckily, they take their fieldtrips out here where we teach them how—at least, how things work. And so we'll have something to—to base their opinion on. A lot of the people that are my age have read something by the Do Wa Diddy Press that agreed with their thoughts already, so they believe it. I look at a book and see who wrote it first. And that the University of Texas or the University of Oklahoma didn't write it, I'm not apt to read it. I'm a believer in good scientific information.

(inaudible)

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JA: Whatever—yeah. But you got to prove to me what the source is. The Do Wa Diddy Press generally ends up being the Do Wa Diddy Press.

DT: Well, let's go see the source of this...

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JA: Well, the source of the water comes from right above. Most of our water's coming out of these two creek channels 50 to 75 feet up, which is a blessing. We control all the water. None of the water goes to another place. This only drains 1700 acres. The range conditions are pretty good, you—it's not high density developed and the watershed's basically flat. And those are three things you got to consider. The topography of a watershed, if it's straight up, the runoff is going to be fast. The size of it,

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it drains 10,000 acres; a lot more water's going to come down that drainage. And the number of people, if I go through an apartment unit complex, it's going to run off differently and it's going to run off with one house every 60 acres. So there's variables in everything. See that squirrel just running across there.

(misc.)

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JA: There's that foot bridge that's swathed with moss. I never do make it up here. This is as far as we can go to this wire and there's some rock laying on this travertine that is—is forming so we don't walk on it. You can see all the leaves and stuff becoming part of the formation, which leave the hollow, crumbly spots and also it's a good place to talk about light requirements. There's enough light here for blue-green algae but not for rock moss. Enough light over here for rock moss, but not for maidenhair fern. Enough light

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over there for maidenhair fern, so you're looking at three different light requirements for plants. And sometimes we get into that. It's—you know, one of the nice things about working in the same place for so long is you don't have to stick to the—what's in the folder there, you know. Well, let me look in my folder and I can tell you that much. Light requirements may come up with some class for the heck of it, so I may ask them. Against the back wall, each one of these flat level areas is a pool of water called a rim dam and rim dams have very delicate edges. It was the area I was telling you about where eventually the maidenhair fern will grow all the way up to the edges.

DT: And is there any aquatic life in these pools?

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JA: Invertebrates and stuff like that that you can't see. The spring water that feeds these pools comes out of the—the collapse of that side of a mineral formation. That whole mineral formation shifted and sent all the water down there. And then this is a—an area where we talk about how the ceiling fell in. Generally, we tease the kids. You know, how many of y'all would like to be at the beach right now? Well, look at here, here's some oyster shells. You're a hundred million years too late. Now they're all looking up here and then we get to talk about the Hammett shale over here that washed away. See how soft this is. And we also talked about that opening in the cave. When we're in the cave, you'll see light coming through that opening. But we—where we have been today, we take all the groups, public tours and school groups. Occasionally with

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some of the—the university classes, we do study different things off the trail. But generally, we keep all the people on the trail, to be fairly obvious.

DT: I had asked you this a moment ago about aquatic life in the rim pool. Can you tell me anything about life in the creek?

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JA: Sure. We've done a—a survey of all the vertebrates—that's animals with backbones—came up with, oh, half a dozen different species of fish, three kinds of frogs, three kinds of turtles, five different kinds of snakes. I see crawfish, salamanders, skinks...

DT: Any diving beetles?

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JA: No. Water striders, it's a—a pretty balanced creek life. There's some mosquitoes in there, but the mosquito fish keep the population pretty balanced. As—as far as the plant life goes, it's just all sorts of stuff from living fossils, like the horsetail to contemporary things like the blueness flower, orchids, columbines, grasses, mosses, algae, all sorts of stuff include.

DT: Are there any rare fish, like puff fish?

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JA: No.

DT: Not of any kind?

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JA: No. Not that I know of. The only endangered species we've really had here is the golden-cheeked warbler, the—the bird. This summer, we had a unusual visitor. It was the first time they'd—they'd ever been sighted in Travis County and it's a Rufous-capped warbler. Yeah, Rufous-capped warbler, Mexican bird. And it was spotted, oh, about first of July. Had some special programs with some avid birders, we did through July until the bird left. And probably what's happened, we talked a—earlier about things moving around, coming and going. Progressively, this bird has gotten into a canyon—u—up by

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Bernie and—and wh—what has happened is the parents that had these successful nests and they—they say four fledglings, it's like go find your own canyon. So these four fledglings go out and scout another canyon and, progressively, they're getting further and further west. Now that trend may go back the other way in 20 years, I don't know.

DT: Well, I had—I had heard that the white-winged dove are starting to be much further north. Do you think that it's the same issue with this move?

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JA: I don't know. I'll bet you could probably get five different opinions on why the bird—why the white-winged bird has extended its range. It may be habitat or maybe it's driven up maybe. Global warming, who knows?

(misc.)

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JA: Another neat thing about being in a place this long is you get to see things that don't happen very often. Eighty-four and eighty-five, that turned into a big, huge icicle. Stayed below freezing for two and a half weeks and that turned into an icicle. It hung from the top all the way into the pool. Inside of our cave, it was the first time I did excavation. I just did not think about the stalagmites on the floor until they turned into icicle and I realized there were hundreds of them. And all of a sudden, there were

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formations that normally didn't—didn't form because so many people had been in there, they tracked mud in there, the water dripped in the mud, it wouldn't grow. But with the icicles, it turned into icicles. And then eighty-four and eighty-five, one of the years it—it snowed a ten-inch, an eight-inch and a six-inch snow. So I got pictures of this covered with snow and all that goes into the file. One of these days, there'll be a—a whole lot of older pictures. I've tried to gather all the old pictures in, interview all the old-timers around here and I literally know more about some of the families than they know about

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themselves from interviewing this guy or getting these pictures because if I don't get that stuff now, it's liable to disappear forever. And luckily, when I moved here, I worked on all these ranches for extra money and they were very friendly with me. Back in the old days, everybody came by and introduced themselves, you know, I'm so and so, I live down the road. I live over here. I'd go into Dripping Springs or Johnson City and meet people there and they were receptive to newcomers coming out and I was lucky enough to interview them because they're not—a lot of them aren't here anymore.

DT: You talked a little bit about extreme events and I think you've told us about floods,

snowstorms, ice storms. Have you ever had a windstorm that's come through here?  
Tornadoes, or what not?

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JA: Yeah. I sure did. There's a cypress in—in the c—in the—in the canyon that got struck by lightning when a tornado came. You could see the line up above the canyon of the trees that just laid over. And it went all the way down that cypress and that cypress has been dying ever since. This year, we had so many windstorms come through, you'll see a bunch of debris in our—in our creek. They're all the same oak trees that go together in a little (inaudible) it's called a chinquapin oak. And you'll see tree branches, you know, 18 inches around that broke off. And we had a—but wind, we don't have as much as—the tornadoes that came through missed us so far. I watched one on the lake—remember that one back in about '90 that came across Cedar Park and Lake Travis and it

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was headed right towards us. And I was going get in the bottom of the composting toilets because it's nine feet in the ground. For 30 years, we lived in a trailer with a roof over it, but I knew that tornado would know there's a trailer under there because you know how they are about tornadoes and trailers.

DT: They hunt them down.

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JA: Yeah.

DT: Well, let's head on back and see a little bit about the...

(misc.)

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JA: We wanted a low profile, so you know, you see these house with a view. To me, that means everybody in the surrounding six counties can see your house. So we wanted something low profile. We've already talked about all the aspects of the roof from the passive heating and cooling to the rainwater collection to the shade. It's lined up north-south so our solar display—I can tell you when solar noon occurs at Westcave. There's a line up and down our floor, north-south; when the light coming through that opening in the ceiling hits that line, it's solar noon at 98 degrees and 14 minutes. Our question with

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our students is how can it be noon in Birmingham, Alabama the same time that it's noon in Fort Stockton? Isn't somebody wrong? And so we can't use the meridian for anything, it fluctuates. What we use in there is you'll see a figure eight in the floor, that's the analemma, that's the way the Earth goes around the sun. And we know it's going to cross that line at 12:32 and 34 seconds, on the money. And so we're using that line and it was designed for a pope back in the year 1700 to find the date of Easter. And

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then we've got the horizons that shows you the way the sun sets, shows you way the sun rises. And then there's an—analemmas that run from noon to six and from noon back to six and I've got a—oh, like a yardstick that tells me the angle the sun's going to be at a certain time of the day. My old neighbor, you'd ask him what time of the day it was and he'd go oh, it's about five-fifteen. (inaudible) how'd he know that? He was so attuned with the sun and the movement of the Earth, something I lost, thanks to color TV and air conditioning and what not, but he didn't. And so this yardstick, I'm going to slide it

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around because last week—or week before last, we went from Daylight Savings Time to regular time. I was curious to about where the sun would be at five-thirty. And so, I went around with a stick and I found five degrees above the horizon at five-thirty. And so the next day, I went out and I watched the sun and I measured and it's about five degrees. But there's a relationship that we, as a—as—as human beings have lost because we have lost contact with the real world. Everything's not real. You know, the mall is there, let's go to the mall. Let's not watch the sunset. And so we're trying to reconnect

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our visitors with certain aspects of the way the planet moves, the sun moves. But part of the building here reflects this because it's so green. A lot of it is just demonstrations and these cu—toilets over here are composting toilets. Nothing goes on the ground. The waste from that building goes to a grinder pump into a r—we—a constructed wetland where plants are cleaning the water. We have different forms of wastewater management here. The building was designed to look more like the CCC had built it back in the

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1930's. All the rock comes from the same quarry at Sisterdale. It—you don't have to ask if you want to sit on those benches, it's obvious you can sit on those benches. It looks like people built that. It doesn't look the guy that built the ETB over at Roundrock built the same ETB at BK. It looks like human beings built that. The rock is either chopped or split or just—or just big pieces. But it's all the same glenrose limestone. The floor a—the—the concrete ash in there is 30 percent flash instead of the 20 percent. Flash is the material left over from making electricity, from the stacks. The terrazzo was

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poured on top of the—of the—ar—artwork we put in the floor, like I was telling you about the solar display, in the classroom, we have the fibonacci series. It's a number series, it's geometry. But it occurs in nature, it occurs in plants and animals. Spiral horns on sheep, ammonites. We have a—it goes down to an ammonite in our floor. We call that nature's numbers. So we have a lot built in the building that we have to explain to people. The doors when we go in, you'll notice the doors are all different colors. Those are the prime directions, north, south, east, west. That's the color of corn; the Navajos

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believed the prime directions were important, so they were the colors of corn. White, red, yellow and blue corn. Y—and here's another really subtle thing. You'll n—if you look, you'll notice that the terrazzo's a really light color on one side and a really dark color on the other side. It doesn't mean anything unless somebody explains it. If you read Black Elk Speaks, to the Sioux, the sun rose in the cool part of the day and set in the dark part of the day and that's why the terrazzo has a cool side and a dark side. And just subtle things like that.

DT: Just fascinating.

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JA: Okay.

DT: When we get up close...

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JA: That's our weather station. Channel 36, Weather Bug. Something I've always wanted. My mother said you can buy one anytime you got the money. Only had to wait 50 something years. The rainwater collecting off the roof goes into these gutters and—I mean, these scuffers and then in the holding tanks. We're using the ones in the classroom and to

water all of our xeriscape, our native plants you see along here. This is a self-guided trail. It goes and it deals with not only natural history, but cultural history. We

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have part of the old 1875 Hammett's Crossing Road. We have a USGS benchmark. We've got a chimney swift kiosk. We've restored the field with some of the rare gl—grasses and wildflowers. We have a rest bench for people who just want to look at birds and stuff and sit for a while. And so, it—everything is contained in this end of the preserve. I—I was kind of balked at the fence line. We're not building anything past that. I could see every year; we build a little more and little more. And then we had to

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end our construction somewhere, for number one, we ran out of money. But number two is you can turn a place like this into a—and I shouldn't use the word Eco Wally World, but that's what you'd end up. Oh, what you need now is an observatory and an aquarium and you could go on and on that we—there's a limit to the size of every place which limits the protection of the resources. If you build over your whole resource, then you don't have a resource. Yeah, I could park more people, I could turn this whole field into a parking lot for one day a year and we could seat more people that waterfall if I'd go

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down there with a chainsaw and get rid of all those trees. We could probably seat a couple hundred people down there. And to me, that's not a good way to manage a resource, you got to have your—just certain things that are built in. And you have enough trouble in parks. You got the—the eighty percent of the park is not used and twenty percent is overused. We'll go in the front door. Handicapped access is through that; it comes in through the classroom end.

(misc.)

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JA: This display on the floor works. Let me turn on these other lights, too. It works through the hole in the ceiling. We're at 98 degrees and 14 minutes west longitude. That's the—this way. Latitude is this way, lateral. The sun comes in through this hole. It's (inaudible). It's the western wall. You came across to (inaudible). When you came across this line today, you were at solar noon at Westcave. There is one of the elementary schools in Austin (inaudible); it's the lazy man's time. It's just a line down the ground and a hollow with a round circle on it. When the shadow crosses that line,

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(inaudible) This fluctuates. This time of year, we're using this line and the circle crosses this line, dead center, and it's 12:32 and 34 seconds. It's going to go all the way down here to December the 21st, that's the winter solstice, that's as far south as the sun ever sets. It's going to come on down here; it's the equal days of the year. Little ninety degree angle off this, I'll have an equinox. That's March 21st. (inaudible), see, you're at 1700, most people don't read or write. So they hired some mathematician who probably

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surveys off the north-south line over a 90-degree angle, westerly. Spring equinox, March 21st, he waits for the next full moon and the next sunny season. Why do they call March this year? Twenty-first is the equinox, twenty-fourth is the full moon and the next Sunday is the twenty-eighth. Everything fell in March. And then the sun comes all the

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way down here; this is as far north as the sun ever sets. The winter—the summer equinox. Now our construction crew drove me crazy. These are not gun slits. These are solstice windows. This one faces the winter solstice, this one faces the summer solstice, the middle one in that office is the equinox. This is the floor and I can show you're up to date. I'm going to use November the first, so I know the sun is going to sit right here. And I'm not sure where the sun is going to be at five o'clock in the afternoon. So I'm going to go twelve, one, two, three, four, five. I'm going to come over here to November

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the fourth, it's going to be 5:32 and 34 seconds, right? Because we get—if they adjust to it. It's going to be about five degrees above the horizon; it's about five degrees above the horizon. I can tell you where it's going to be at 3:00. It's going to be 33 degrees. One of these days, I'm going to get like the old man. I'm going to get as good as where I won't need a watch. All I'll need is just the sun being out. But this came out of a church in England.

They're scattered around—I mean, or—in—in—in Rome. They're scattered

00:41:39 – 2320

around Europe, but this is probably the only one of its kind in the United States. Well, you can read about it in the books (inaudible). If I close the doors, it allow us to cordon that area off. And this is the classroom area, but we also use it for things like butterfly gardening workshops and stuff like that we do on the weekend. Because on the weekend, we can have something going on in here, shut these doors and adjust the temperature in here because big groundsource units are behind this wall. The groundsource units run off of ten holes in the ground, 300 feet deep with sealed loops of water in it. So we're

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starting with 68-degree water that's injected onto the heating and cooling coils. So to go from 68 degrees to 78 degrees doesn't take much energy. Certain times of the day, after Dave and I shut everything down, we'll go into a negative mode and we're feeding energy back into the energy grid. So PEC's paying us. Last February, our bill for this building was 50 dollars because when everybody left, we cut everything off. There was no reason to have anything on. The fibonacci series is the series in the floor here and

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it loops all these in the same equation. You mult—you divide the bigger number in the same number and you can come up with the same angle here, 1.618. So all these are the same and it end up in a ammonite. And this is the room where we do all of our classroom work and you see on the board (inaudible). We'll talk about how an aquifer works. With the smaller classes, we're able to go outside. We do not cover that end for a number of reasons. Number one was if it's raining, we're not conducting classes, so there's no reason to be out there. Number two is we didn't want to cut these trees over here;

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there wasn't any need to. But with a smaller group, time permitting; we do some of our lectures outside. And then the picnic area's over here. The reconstructed wetland is over there and the solar array that is supplementing our, you know, of course, this time of day, not much. But that's—that's this end of the building.

DT: Could we just orient ourselves to where the canyon is and also where the building is on your map there?

00:44:10 – 2320

JA: Here's—this is—this is one of the reasons I wanted to use this area. This is the old

facilities over in here. This is where we are today. There was really nothing here. I'd restored the grasses in this field, so we had a minimal amount of impact. We walked down the upper trail, which goes along this canyon bluff and then ties into a deck and you can see the deck overlooks the last set of rapids on the river. And it goes to the top of the canyon where we parked and then we walked down in the canyon and then we walk up to the waterfall. Now all the springwater comes from above the waterfall, right in here, it  
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flows into our creek. It flows down—the bald cypress growing in the creek is a sign that creek does not dry up. You don't find bald cypress in intermittent creeks. They're permanent waterways. But you can see, we just had an elm here. We just had 30 acres. We have a neighbor we're been working with about a conservation easement or a purchase or some deal with him to buy, for lack of better terms, we call this a ring around the collar. What we want is a bigger buffer zone. Very few parks end up with what they  
00:45:22 - 2320

should get and a house right here would be—how would you like it if we were listening to the morning news tomorrow morning down in our canyon? Or, worse, a dog barking all day or fertilizers from the Saint Augustine grass. So we want to control the runoff from all of this if we can. We built—one of the reasons we built the building here is it isn't in the—the watershed of this. It's the only place on the property where the watershed is the river. I don't know why that's important but I think it was important to one of our board members. Ah, the water's going to run into somebody's watershed.

DT: Let's go outside and look at your constructed wetlands.

00:46:12 - 2320

JA: And see, this didn't work. We had this vision that the state would approve our drinking water so the—the rock guy that made those water fountains for us. Move all this.

JH: These are some cool water fountains. The fact that he build these water fountains, I mean, my goodness.

(misc.)

00:46:38 - 2320

JA: And their handicap access—I went out one day and asked him what he was doing? He said well, you said you wanted water fountains. I couldn't believe it. The water fountain fits in there. This one is a handicap where you can get a wheelchair under it. All the wastewater from this building and a 90-degree—this—this one here was 90 degrees, so we could take pictures of birds or stuff on our wall at cistern. The hard thing with it was finding native plants in an area of Texas that flooded so back. Because I was pretty insistent that the only thing we'd put in there was native plants. So we go from the

00:47:13 - 2320

water from our—our visitor's center into a (?) pump here and it goes underneath and around the building. (inaudible)

(misc.)

00:47:39 - 2320

JA: Goes into these two septic systems, then it goes into this pond and makes four loops around this pond and these plants are cleaning the water. Even during the winter, if these die back, there's still amount of up and down all day. It's like the Amazon River, there's so many plants there, that's some clean water because the plants are cleaning it all. The plants are cleaning this so I can't say this is new technology. Once it's gone it's fourth loop, it goes

over to the Christmas tree which is pumped over to a distribution field where, hopefully, everything has evaporated. Some of it bound to seep back in the grass.

DT: Christmas tree is a drain field?

00:48:22 - 2320

JA: No, the Christmas tree, I can drain the whole thing by opening the bottom valve. It's a—a Christmas tree like on an oil field.

DT: Oh, okay.

00:48:31 - 2320

JA: You know how they have a—a Christmas tree. And so this is all of the reconstructed wetland. That's a solar array that's designed to track the sun. Now I've got a joystick where, if I have time, we can get out and I can aim that thing on the ground, say, look, it's producing nothing. What's the problem? Well, you've got it aimed at the ground. Why don't you aim it at the sun? Oh, so I have to aim it at the sun? We talk about the free energy we get. And we can move it around and then it'll go back to tracking the sun, which feeds back into our energy grid. We talk about solar energy.

00:49:05 - 2320

Why has wind power become so popular? Because they've messed with it for years. We've used wind power to grind corn, to pump water and so making electricity's no big deal. We haven't messed with solar arrays much. I have a solar array in the classroom that it was liberated from the U—United States Air Force and it's about 36 inches by 36 inches. It produces less than a watt and it was built in 1965. That produces close to 3000. That's how much technology has advanced in the last 50 years in solar power and that's why it's important to go ahead and mess with that. Yeah, it's not producing

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anything; let's just blow it off. Well, until you've produced with electricity for a hundred years and you've miniaturized things down, they don't work unless somebody plays with them. And then our trail ends up over here at a picnic area. Today we had 60 kids and adults eating lunch over here in the school bus on preserve.

DT: Well, I think you've told us a lot.

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JA: But other than that, we don't do much.

DT: Well, let me just try to—if I can—get my mind around this and wrap it up for those who might watch this later. We managed to see the preserve and I'm wondering if you can tell about some of the things that you think are important to pass on about the preserve or about natural history that you've learned at the preserve when you talk to folks who might come later. Is there some special message in a bottle that you'd like to pass on? That you can sum up, because I know there's so many diverse parts to this.

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JA: The main thing is the state of Texas—or Republic of Texas—and I don't—I'm not—I mean, I'm a big supporter of preserve land, but parkland in general; we just don't have enough in the State of Texas. I try and bring up on all of our public tours, there's a—a little story about when I spoke at the Wildlife Society in 1980. I came across this—just—just—this thing. I just said the State of Texas has less than one percent as public parkland and I went wow. So I got to looking and I realized the Republic of Texas, everything was already owned. I had to rewrite the article in 1990 and it was two percent and I thought well, where'd the other one percent come from? Well, it came from the Big Bend Ranch, the

Rosillos acquisition, the Nature Conservancy's acquisition for Big Bend National Park and the Chinati Mountains. Most of the acquisition in the way of land and size of the public parkland came from one acquisition. I think it's important that

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we do more, like Austin has done with the Balcones Canyon Land, the recent purchase Travis County has made of more parkland and the readiness of the average taxpayer, average voter in the county to think that's that important. There are some counties that think that th—it's not that important, big deal. But it is important in the state of Texas, not for just us, but for our great-grandchildren, for people who live here in a hundred years.

DT: Was there anything else that you'd like to add? I've asked probably too many questions. Is there something you'd like to volunteer?

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JA: A—about the preserve?

DT: Well, about yourself or about the preserve.

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JA: I'm just lucky to be here and ju—and get to do a job that you like. Most people go to work every day and talk about Friday. Friday's the same as a Tuesday to me. I don't care. I just look and see who's going to come out and, for the most part, enjoy most of my work. I'm—I—I think I'm a little enthusiastic. Maybe too enthusiastic.

DT: Well, your enthusiasm's infectious. Thank you very much.

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JA: Sure. Thank you.

DT: Appreciate your time.

[End of Interview with John Ahrns]

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