

Drobney 1 2

I: Interview with Pauline Drobney, December 1st, 2016. Interview Jean Eells. So, [coughing, excuse me] it's all right we'll just start out with whatever coughing we need to get out. Get it out. So let's start from your beginning history of prairie awareness and where you started kind of getting into prairie and start kind of from that beginning history.

P: Well, I mean my very beginning history was really my family as a child and my mother would bring in flowers from the roadsides. There were six kids in my family and she was a very busy person and always did her art on the side despite the fact that there was never enough of her to go around probably. But she would bring home prairie flowers and-- just flowers on the roadside and she would take them apart to see how they were made and then she would reconstruct them in through wood fiber, flower arrangements from these shavings of a tree from [Farm Wilson] and had moisture in it, and they were very beautiful. She was very good at that. She would put some of them in a garden and some of them got kind of weedy. I can remember the-- you know, some of like the wild germanium and the-- some things like that and my family had this way of functioning in the world where we had just free-range kids, you know, and it was it was a lot of my four older brother would bring home skunks as pets and so spotted skunk, I know because it stood on its front legs and sprayed me-- he didn't realize she was scared for the dog, she had a litter of skunks, so there was skunks and bats and birds and all kinds of-- we had raccoons in the house and squirrels went up one side and down the other so it was sort of this context of at least-- which is really weird in a way because in northwest Iowa, where there is very little prairie, there was at least some kind of kernel of of that relationship I guess to the natural world and my grandfather then took me to Kalsow prairie when I was sixteen and I had gotten my driver's license and he was elderly and unable to drive anymore and asked me if I would take him to Manson to get some coveralls for his ample body and so I thought, yeah, I get to drive and that's cool. So we went there to Foley's Clothing, got him his clothes and on the way back he said, have you ever seen that piece of land they never plowed and I said "no," and he said, "Do you want to do there?" And you know, more to humor my grandpa than out of any really curiosity, I said "sure." So we went to Kalsow Prairie and you know, I don't really remember the conversation very much, but that remembrance of my grandfather and I standing on that prairie. I tried so hard-- I tried, we didn't walk out into it, it was mostly standing out on the road as I recall, but I remember the Kalsow Prairie-- it must not have been a preserve for that long, really, but he said, "So," I mean - I tried to imagine, I tried to hook this experience to something that would make sense to me, so I tried to think of my ancestors coming across the prairie in covered wagons and in the end it just didn't work. It looked like a bunch of weeds to me and so we stood there on that gravel road out with the ancient wisdom of prairie before us and the corn field behind and my grandfather and I-- he in his old age and I-- inexperienced and ignorance I guess and that has become really a powerful metaphor for me-- a very powerful memory and I think one of the lessons I draw from that sort of memory is that

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you know, you really can't-- you can't get an understanding of prairie by standing on the outside edge and looking in. So really important as we think about prairie to find ways for it to really connect with people as my dear friend, now deceased, Rayford Ratcliff, who was a volunteer at Neil Smith-- no, yeah, Walnut Creek national wildlife refuge when I was an early biologist there said to me, he says, "Pauline, in order to understand prairie you have to get your back up in it" and absolutely right. You gotta get your back up in it. And so that was-- but the other thing about that experience was he did sow the seeds in me and so it was at least a touch place, it was a context. If you never see it, you will never know it and you'll never care about it and so, the next, you know, I guess, Nexus with prairie for me was when I went to college at UNI and I thought I was going to be an educator in special education because I had some experiences in high school assisting a teacher who was very gifted and--- but I kept gravitating towards towards the natural-- the courses that related to the natural world and to science and just, I sort of followed that inclination and ended up at Lakeside Lab and if I remember correctly, I was trying to find classes that related to animals but they were filled. There was no space there so I ended up taking five hours of freshwater algae and five hours of plant taxonomy. John Dodd and Larry Eilers, my instructors, one of my, one of my, colleagues, one of my fellow students in freshwater algae was Dean Roosa and it was a wonderful experience for me there to-- just to have just like a half a dozen people, a handful of people and wonderful instructors and students who were just oh my gosh, just it was like-- if I could take all my classes like this, this would be great and so having Dean in there, he was working on finishing his PhD and I just remembered learning so much, not only from my teachers but from Dean in freshwater algae and then Larry Eilers, something crystallized when I took plant tax there. It was, it was a world. Out in the world, all that-- those different species of plants and the power to name them and to know how to name them and then to look at a Lemna minor, a little tiny duckweed plant in flower, under a microscope-- oh my gosh, they look beautiful! Who would ever know, you know. Who would know? Unless someone says, "Look! Look at this little plant," so it was one of the things that just blew me away in plant tax was just the incredible beauty of flowers, plants, the edges of leaves, all of these textures and shapes and colors that are there but I suppose insects see them, but we rarely look close enough to see that sort of thing. You know, I think this reminds me of a conversation that I had with Gerry Wilhelm then taxonomist at Morton Arboretum who's who was the the student of Ray Schulenberg and Ray told him according to Gerry, "look at this." and he and Bob Bass were both in the same kind of-- both students of Ray Schulenberg, "look at anything in nature underneath the microscope and now look at something man made underneath the microscope and they are jagged and imperfect and it is course." But you look at the thing that came from the natural world-- a prairie flower, it is absolutely exquisite and the edges are finally-- they are the opposite of course, they are refined.

[loud bell and someone is called to somewhere]

Drobney 2 12

I: Session 2. December 1st, 2016. Interview with Pauline Drobney. Resuming after interruption. Interviewer is Jean Eells. So the edges of the leaves and their perfect.

P: Yeah. Yep. So a person's path to an appreciation of the natural world can come from a lot of different directions and I suppose in some ways my circuits. When I was in college as an undergraduate, I was told do not go into the sciences because there are no jobs there. And-- but that was what drew me, and and and but I struggled with courses like Chemistry because my mind didn't work that way and in order to keep that-- keep myself going and focused and just relived of the courses that I needed to take-- and I just fully expected that I would go straight through and get my PhD., I started taking Art courses and by the end of my time as an undergrad, I had-- I had a double major in Art and Biology and so what-- I had decided that to follow my passion that is probably the best director of a life is to follow one's passions and if you are very good at the things you do, if you love the things you do, then you are more likely either to have the kind of-- a job that will produce enough money for you to be satisfied, or at least to be satisfied with what it is you are doing. So that was my, that was my decision. I worked with Daryl Smith in 1976 as an undergrad-- well, let's see. Going back before that, actually, my experiences with prairie, sort of overlapped with the time that prairie reconstruction that planting prairie began in, or at least in Iowa and I was the first class, I was in the first ecology class that Paul Witson taught that examined Smith's weed patch, you may have heard about, the prairie planting up at UNI that Daryl directed and I remember walking out into this prairie with with my classmates and not really knowing at all what we were supposed to be doing, but looking for prairie and you know, it was the first year after planting as I recall, first or second, I just know we couldn't find any prairie. We-- a lot of foxtail, but no big boost and it was just grass that was planted, you know, back in those days, that's what we understood as a prairie reconstruction and so it was all cultivars as well and multiple kinds so that was my-- my so as Daryl Smith was dipping his big toe into the water of thinking about what is it that's here and how do we re-build that, I as a student was kind of toddling behind and thinking what they heck? You know, what is this? You know, what, it just, really it looked kind of miserable. You know, and so eventually I-- the year that I graduated, 1976 was the bicentennial and Daryl had gotten a bicentennial grant to do prairie reconstruction on the preserves system at UNI and to do management of Cedar Hills sand prairie and some other prairie remnants and it was again, some beginnings of some experiments-- how do you get diversity into these, this this planting, which by that time, was definitely dominated by warm-season grasses, native species and we were also trying to build planters that would be exhibit areas that people could come, and the idea was that there would be color coated stakes and you could look and you could say, if it's blue in this ten by ten plot, it must be a Great Blue Lobelias or whatever it was and so we worked on that and we worked on trying things. We'd go to roadsides and dig things up and put them out into the prairie and put them into these places and we did tree cutting and we did a lot of

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different things. We started the-- did we start it then, the mixed grass prairie exhibit or preserve-- anyway, very small little area but we were working on these areas and that year was done and I went away to Phoenix to experience a different ecosystem, got that out of my-- that's a whole-- another whole story. Came back to Iowa because I was mostly kind of not finding jobs that provided money. I had made like three thousand dollars for the year, and so, you know, ended up coming back, which is fine. I ended up learning more than I did in college probably picking up tin cans and aluminum cans in the alleys and just-- just learned a lot about life but because I had such limited income for that year, as luck would have it, I wasn't really sure what I wanted to do, I kind of wanted to work with plants and the natural world, and I walked into the UNI greenhouse to see if there was any jobs there and it turned out there was this job, it was a CETA position---

I: CETA?

P: CETA. C-E-T-A, and it's, I can't remember what it stands for, but it was a position that was designed to help low-income people become employed, well, I never really thought of myself in those ways, but I had only made three thousand dollars for the year, and there was a cap on how much you could make, but they wanted someone with a college education, and no money and I don't know how they ever expected to fill that position, but I-- it just, it happened that I did so that was, I was the first hire for the UNI Biological preserves system greenhouse and that is where I honed my skills, you know, in the winter times it was spent in the greenhouses and tending that conservatory greenhouse collections and was-- then there were project house and that-- the one house that I was able to get started was a native plant propagation house-- so that was my playground, and I remember going out and I'd have to sneak away because I wasn't really allowed to leave the university, but to go get seeds, I would sneak away in the truck and no one told me what the plants looked like in seed. I did not know what to do, and so so to-- I would go where I knew I had seen certain species, in roadsides and then I would think, okay, if I was a Culver's plant, what would I look like in seed? And then, well, it would probably still have that candelabra arrangement of-- that the inflorescent had only it would be seeds-- right? And then I would find some, and think, ah! That's it. So that was the process because really there was no one there to tell me what the plants looked like in seed so part of my job was to introduce diversity into the tall grass prairie preserve and I had this rotating cast of students that was under my supervision and we tried lots and lots of different things and you know, I would do things like in the exhibit area I would take cuttings of plants like Blazing Star and I would make notes about the position on the plant and I would try to root those things. I would try-- I thought maybe some things could be rooted as opposed to started from seed. I even tried things like lead plant and New Jersey tea and surprisingly got lead plant to root from cuttings and other things that I was surprised that that could work. I learned a lot of things. One of the things I learned, we did, Highway 63 north of-- north of Waterloo had wonderful remnant prairie there and in fact I used to go with friends to visit prairies and various

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places and where I would go on my own to-- like northeast Iowa and find a hill prairie that looked good and ask the landowner if I could go explore, and they'd say, uhm, "can you identify rare plants?" And I'd say, "yeah I can." They would say "Don't." Well, I don't have to. I don't have to do that. They were very concerned that I would be finding something rare and it would impact their management of their land but mostly very good people. So we'd explore around and things like that. But Highway 163 at one time I asked, or-- Highway 63. I asked Daryl Smith, I wanted to see prairie smoke. Where's prairie smoke? He said, that's Highway 63 and it was spring, I didn't know what it looked like and I went up there. I may have gone up there multiple times. I went up there and drove past the place where he said it was and drove back. I couldn't see it. I finally parked the car and just walked the ditch and walked back several times where he said it was and I could not see if so finally I went back to the corner and I got on my hands and knees and I crawled. I started crawling along in the ditch, just I'm sure that must have looked interesting to people passing by but I crawled in the ditch on my hands and knees until all of a sudden there it was under my face. Prairie Smoke. Old man's sisters as others like to call it. Beautiful. Beautiful plant and it was just one of those ahhh my gosh. So sometimes you know prairie plants hide from us and so there's one thing to be aware of that and it's one thing to really seek it and then and then to you know almost have it as a [cohen] or as a search or as something that drives the spirit which it was for me and one time I went to Clay Prairie which was it's near Allison. It was one of the state preserves that was under the jurisdiction of the preserves system and very tiny two point eight acre prairie, very diverse. I loved the place. It had shooting stars and-- on the one end of the phenological scale and on the other end it had downy gentian and so I was always trying to get some downy gentian, I wanted to try and grow it and could not find it. Could not find it. I looked and I looked. It was a December day and finally, I thought okay, I'm not finding it. So I just went and I sat down. I just sat down where I thought it was and I let it come to me. And it did. It was right next to me. There was downy gentian of course it looks very different than it does in bloom but I mean, it was just thrilling that you know, there it was and I felt like it had, you had permission to see it in a way. So anyway, understanding plants, understanding plant communities, where they grow, how they grow, how to propagate them and how to introduce them into prairie plantings. How they function in a remnant natural community. All of these things are things that I explored during those years that I was at UNI and many other things and-- Highway 63 was graded, it was the new road put in, it was an old road and there was all this good prairie there so I got permission to go with my my staff and dig it up. We spent a summer doing that and that and that merits another whole thing. I got to experience roots. Many people will look at the tops of plants and they will-- they'll begin to know how to name plants but very few people I think have seen as many roots of plants as I have, and not only seen them, but dug them and some are very brittle and snap, the New Jersey tea, the different types of asclepias that have-- the milkweeds, each of them have a little different root form and the way it takes a little turn from the stem and goes down into the earth is different among the species and the shallow rooted species of spring as opposed to those ropes of summer like lead plant and New

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Jersey tea and Compass Plant and how much of a plant do you need to get to get it to grow when you transplant it and then, you know, a deep sorrow actually, to be digging these things up because it seems so wrong and I saw these people who are doing the road parking the heavy equipment on this really nice kind of triangular corner piece that was this wonderful prairie and I guess-- it was just funny talking about it, I can remember seeing milkwort there and various species and I went up to them and I said, "You know, you are parking on this wonderful prairie," and I explained to them this is a wonderful-- this is a part of what was here before we were here and asked them if they would park in another spot where it wasn't so sensitive and they agreed, but what I learned from those folks was that the only reason they were doing this this grading on the roadside was because federal dollars were involved and so they didn't need to do it. The grading was fine, the level of the roadside was fine but it was because it was connected to federal funding and they felt obligated to do that so another lesson is that if we care about, you know, a roadside seems like not much, but when you have a very rich roadside which probably was there when prairie was the outer extent of the road and it moved into the disturbed roadside before the prairie itself was gone-- that's what we have left in many cases, we need to cherish those things. Those communities that still persist there but if we want to-- if we do think that that's important, we have to be very proactive. We have to, if it's DOT we have to be there before they are planning because they-- so many organizations are planning, I mean, that really have nothing to do with conservation-- are planning way in advance so part of what I think we need to do as a conservation community is think about where those things are and we can't anticipate everything that's going to happen. We can't understand where everyone's plans are going to be but we might be able to find a way to identify those precious areas and you know, that's just a road side I'm talking about but I better-- and find a way to to-- maybe garner a greater-- the whole thing boils down to a conservation ethic which our culture minimally has. There are people who have very strong conservation ethic but as a culture we have a very diluted conservation ethic and it's not-- I think we are the culture without ethics, but we like-- me, what if my grandfather never took me out to Kalsow or what if I hadn't done Larry Eilers class, you know, it's just, I don't separate myself from people who don't know about prairie, savannahs, the natural communities that if we are not careful will be gone, I don't really-- I'm not-- I'm very humble about that because it's just in my mind a quirk of luck in many ways that I do have some understanding. I don't-- you know, I've had a lot of experiences through the years starting with the ones I have talked about so far and I directed a research program related to prairie and I've done a lot of things, but I don't feel like I know a lot, you know, that it's-- there's-- the more you know-- there's a clique of the less you realize, the less you know and in conservation this morning before I came here, thinking about research-- how imperfect it is to study prairie for example because in terms of the way-- our paradigm of science operates, it doesn't, it's sort of unsatisfied because we are trained to have these kind of experimental designs that are outside the rules of the natural world and so there are all these issues that we also kind of-- we need to study things from a scientific perspective, many things, but there's an overlap of the things we can

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learn from science and the things that we will never learn from science, but we can only learn from experience and and and and from it, I think-- when I was-- I'm kind of meandering a bit, but when I was the Biologist at Walnut Creek National Wildlife Refuge, which was renamed National Wildlife Refuge, we started this grand experiment to try to reconstruct from scratch prairie, Savannah, the natural landscape as much as possible in the way that it existed prior to European settlement of the area and it had never been done. This had never been done on this scale and scope to really emulate the historic natural condition and-- there was a point I was going to make and now I have sort of forgotten what was I talking about just before that...

I: Things that we can know scientifically and things we can only study by experience or learn by experience.

P: Yeah, so in in in one of my my jobs, probably the thing, I was probably much better at this than I was as a biologist in terms of all the monitoring that you-- eventually I should have been doing or tried to do was that I was able to speak about it and I could put together thoughts because it was a very controversial refuge and I was able to put together the reasons that that was important, that that could be important and it was because you know, people in Washington that-- you know, words like zoological theme park came up that were people in the Fish and Wildlife service mostly did not want to see this because it had money it was a congressional appropriation that spawned this refuge and so but when that money ran out, everybody knew we would be in competition for the same funding pot as everybody else and they didn't really like it that we had money-- and they didn't like it that this refuge was starting on corn fields, you know. And so the conservation community did not like it. I say that and that's a broad sweeping brush for all of these people I am talking about. There were supporters in all of that-- all of these different groups, but broadly a lot of people really did not-- the conservation community here, you know, well if you are going to have a refuge, why are you putting it there? Why not put it on you know, eighty-six hundred acres of prime prairie and then local people didn't like it because their perception was that this was loss of tax space, but it was also coinciding with a time when the schools had merged so there was this consolidation of Prairie City and Monroe schools. They had funding for that, and the funding was evaporating and so there was some anger about that you know, and in the federal government it's easy to hey-- and then there's Iowa Light and Power...

I: Roughly what years were those?

P: 1991, that the refuge started. 1992 is when I was hired. I was one of the first hires and so the, the rest of the Iowa Light and Power had owned the thirty-five hundred acres or so the front the core of the refuge I think was what caught Congressman Smith-- former Congressman Smith's eye and it was not too far from Des Moines so that might be a good place for a refuge and but people had been-- at least the story that we

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heard as Fish and Wildlife employees phoned people was that this was originally depicted as an agricultural enterprise, but it turned out to be where there was supposed to be a power plant. Now whether that was true, really true or not, we know that history that's beyond my time but all these feelings come together and they create their own reality and so my job was to figure what ecological restoration looked like and certainly there were many people who surrounded me who lent to this, but that was my seat at the table at the refuge and I was charged basically with, okay, why should we have this refuge, we need to tell this to the public, to the Fish and Wildlife Service, to the conservation community, to the people on the economic development board and because I could speak well and articulately, I was the one who was the face of the refuge for many years and so to understand that you know, we didn't pick where that refuge was located, it was located for us A. B. There are no prairies of that size on natural landscapes that represent you know that the tall grass prairie of central Iowa. What was here you know, that just didn't exist at that scale and and if Iowa is the center of of-- if Iowa is the most disturbed state in the union why not make this the center of healing and so these were some of my messages and then you know, it turned out that there were so many things-- you could change the way a person thought you know, so another thing we need to be cognizant of as we think about where we've been with prairie and where we are going, just what sort of messages do we want to give to people. You know, we want to find things that resonate with people. The thing that I got - when the refuge started, I really wanted to get baseline data for what was one those beat-up little remnants because that would tell us what was there. That would give us the beginning place and I had been after many years of working up at UNI in the biological preserves system and greenhouse, I finishing-- I stopped. Took a break, got my graduate degree, went and then-- and then I decided I was just-- I wanted to do something else and I explored, explored job potentials in various places and got actually job offers in several in several states or salutations to come to apply for jobs in Kansas, Missouri, Illinois, and I decided to stay in Iowa and the department chair at UNI said to me, he said, "What are you doing?" He said, "I have students who would literally cry to get some of the jobs that you've turned down." And again, it had to do with that-- certainly I had some family issues, my mother was aging and I wanted to be nearby, but my-- one of my big motivations was that whole thing that if all of the people who have passion and some skills and recognition that there was something special in Iowa, if it's all gone, it must be different than a place that still has things. It must of been a different sort of landscape. A different kind of, you know, oh my gosh. The plants, the animals, the soil-- it must have been very different in this rich black soil of Iowa. This incredibly production farmland that we have. There's a reason that it is. Welp, so I'm going to stay here 'cause I had a-- I had a strong attachment to Iowa and shifting from that attachment to sort of the farm landscape to the natural landscape, yeah, so I started my own little business and for about a year one of my clients was the US Fish and Wildlife Service. Maybe two years. I had a terrible business sense. It worked for probably about a nickel an hour-- by the time I put in all my-- all my hours I put in to do the fieldwork and write reports, I just did way more than people expected, I'm sure. I know. One of the

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things I was hired to do and by that time I had enticed my husband Scott Bryant into joining forces with me was to do a survey of the existing vegetation for this new National Wildlife Refuge. At that time there were only thirty acres owned by the Fish and Wildlife Service and so it was for the environmental impact statement process that I was hired. We worked, you know, it was farmland. Crops, corn and beans. Some CRP. The old style CRP which is brome and then some acres that are left around here and there just for whatever reason that did have some natural character, but it was fascinating for me to look at all of this and *Juncus latifolia* the one plant that was everywhere, even in the corn fields, the crop fields-- it was everywhere, but otherwise, you know, we were able to get some aerial imagery and learned to read the signatures on the landscape and could figure out where the little sentimental pieces were in the reed canary grass, and reading that we would go to each place that you know, we learned that-- go where the trees are if you want to find prairie, so another lesson for trying to find prairie is it isn't necessarily going to look like prairie and if you want to find savannah, even harder because people think it's forest and if you are looking at forest and you call something that's a hundred percent canopy of forest, you've sealed a deal. It will never be-- it will never recover. It cannot recover because Oaks can't reproduce in the dark and all that diversity of plant-- of plant diversity in the understory will not survive and all of the invertebrates and really dependent animal species won't either, so those are the things we started looking for is where are the trees mostly. Turned out that's where the remnants were and so the thing that I came away with from that-- not only that, you know, looking for-- other people actually some of the things that we found as something very different as worthless-- of no value but because we looked carefully in the understory and all of those kinds of herbaceous things we came to a very different conclusion and so it's not going to look like what it should look like because no one has cared for it and one of things I came away with as a conclusion from it that time was just this hope-- hopefulness that if there were on this eighty-six hundred acres of land-- eight hundred acres that had some character-- some natural character, there was a lot of hope in Iowa, you know, if there was a way to somehow cultivate this conservation ethic-- this land ethic, this ethic of conservation in Iowa we really might be able to turn things around. This opportunity will not last forever but it was just-- even, I just remember looking in this pasture and there was this multiflora rose there and in the middle of the multiflora cows had everything grazed down to the nubbins and there in this multiflora rose was a compass plant. Compass plant is an ice cream plant to cattle so this whole pack of ironies you know, the cattle with severe and repetitive grazing and heavy stocking will remove most of the species diversity, especially with active inter-seeding of cool season exotic species this this had been inter-seeded and and our good idea about multi-flora rose as living fences you know, and then by that time of course people abandoned-- getting rid of multiflora rose and so here in this invasive species of prairies and savannah, existed this refuge for a prairie icon. The compass plant. You know. Aldo Leopold you know, the famous quote of what it looked like when a thousand compass plants tickled the bellies of the buffalo is a question perhaps never again to be answered and perhaps never asked. And then I just-- ah. We need to look carefully and

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observe carefully because there are things that are out there still seeking our stewardship and so anyway, that's when I ended up being at Neal Smith National-- or at Walnut Creek. Didn't want to be-- I was part of the Iowa Prairie Network as the-- one of the founders and the first president of the Iowa Prairie Network. I came to the meetings at Walnut Creek, National Wildlife Refuge with a big chip on my shoulder and a lot of skepticism because federal government I did not believe could do anything right when it came to natural community, conservation and reconstruction and was totally surprised by the conversation, they were talking about locally produced seed-- Daryl Smith had a lot to do with that. Eventually-- I'm not sure where that intercession came into-- that was the first probably here so I'm not sure if he had been involved in that or not but anyway, it was a very interesting meeting and after I had gone through and done the survey of existing vegetation I found that that my-- my very negative opinion of the Fish and Wildlife Service changed to-- you know, I always wanted a big project and you know, there were somethings out there and so I kind of became obsessed with the idea of becoming a Biologist, which I eventually did become-- it was very challenging. All of this was leading back to those-- looking at those bits and pieces and I wanted to have the-- to get these, this baseline data and we had gathered information on the plants but we needed it on the worms, we needed it on the insects, we needed it on the-- you know, the vertebrates, the birds-- that was the hope. We weren't able to-- we would not break loose a lot of money for that, but we did get twenty thousand dollars to do some base-- which was rare. To do that pretty close to the beginning of the refuge and one of the things when we talk about understanding how to tell stories to people, I invited Sam the Worm man, I called him. Sam James who was from Fairfield. A professor there, who is a worm ecologist. I know Sam, so I asked him to come up and take a look at the worms. We went out and we looked at some remnants and we found 'em. We found 'em in these beat up old places so something really interesting, he said he had looked at several TNC properties and not found any and and so it was not necessarily high quality remnants so another lesson is we don't always have to have the highest quality remnant in order to gain to gain to have something that is important to care for. So that's another lesson. So these earthworms, of gosh what was it, something dithcardia it had that-- one of them had two hearts-- maybe all of them do-- anyway, purple kind of purple little worms and it was a fascinating story that Sam told me that that was about the northern most extent he'd found earthworms is at that refuge but they weren't out further north than that and he said for the longest time he thought it was a habitat obstruction but he came to notice that in Illinois it followed the same pattern as in Iowa and there was kind of this pattern and it seemed to be related to this glaciation pattern and that the native earthworms were not north of that line and they were south of that line so his thesis was that these worms that-- glaciation was hostile to the-- to the worms but because-- so that was the more recent glaciation that occurred in the north, he thought that might have wiped them out because the southern Iowa drift plain where Walnut Creek was and it was an older land form, it had been glaciated earlier and those worms still-- they had survived there and then the whole idea of competition or the competition of worms and these exotic species who compete with the native species and he did all these

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experiments with his students about putting these yellow worms that were from China that were very voracious you find them in isolated pockets on stream banks when yeah - like people would dump their worm bucket out when they are fishing probably and so we would spread-- probably-- we would spread you know, exotic worms around inadvertently, or who cares, right? Who knows? Who knew? Who knew? And so they-- if you put them together they will basically out-compete the native earthworms because they are very voracious the native earthworms were apparently much more efficient in the way they fed and function very differently. So the night-crawlers that we fish with are not native. Well this whole story, this is a story and the part that hooks people-- because they fish or because-- you know, they have that relationship to earthworms. Or they think about earthworms as nutrient cyclers, I mean, I think about them as good for the garden, and they think about worm castings so if you can tell a story-- I've found that-- and actually, I get requested to tell that story so when the person who was the director of the Green Valley Association of the area was going to have a presentation by the refuge I was the person to give the presentation and he says, "tell the story about the worms." And people like that story, but here's what happens then. You tell a story like that and it's fascinating because like I said people know about worms and they are in their backyards, you know, you go out night crawler hunting and with the flashlight and so you know about worms, but who knew there was all this dynamic going on and then I would say, so if worms are good for the soil, what took care of the soil thirty miles north of here? In the Island surface or a little to our west in the prairie pothole area, you know. It must be very different. The way nutrients are recycled is very different here then they are in those places so then the prairie communities are different too and now I can start talking about local ecology and the way things functioned here in Ames as opposed to the way they functioned over in-- at Prairie City or by-- where I live, near there, or where I grew up in Pocahontas up in the flat black lands of the prairie pothole region or where I went to school up at UNI. You know, just those places are very different, but even from here to where we are in the Library in Ames to maybe the University Library. Different conditions exist and so it's not enough to save one prairie or one savannah or one [sedge meadow]. We need to find ways to-- truly believe that it has to come from the people that live on the land. It has to be this something that's a part of their daily culture. Their daily lives, their daily values. Values in a way that we could make a decision that would cause us to sacrifice one thing for another in order to preserve this or we would embrace it as a part of something that we need to do in order that it can persist. So I'm writing this book on savannah management and this workbook and it-- I've been doing a lot of reading and thinking and certainly all of my experience in natural land management, managing remnants, managing reconstructed natural communities-- tells me that if you walk away from it, it dies. It goes away. It degrades and you know, there's the story that's been told to me about the people of place. Native peoples that were people of their place and it wasn't necessarily interchangeable. Like somebody from where we are sitting now wouldn't necessarily go over into you know the Chicago, Illinois area or down to Kahoka, Missouri and just live there and take up because they don't know those places and Gerry Wilhelm told me the story many many years ago

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about the people who-- as people were being displaced, I won't tell it as eloquently as he does, but the people in Illinois were sent to-- because people kept coming the European-- there was encroachment by non-native Americans or European settlers and pushing pushing people further, displacing them from their native hunting grounds or where they lived and tended the wild plants and all of the things they did and so did the elders sent their Shamans ahead for the west and said, "Find a place. A place for us. Go and see where we can be." And they went-- they went to this new place and they watched the people there and they watched what they did and saw the way they interacted with the land and the plants and the animals and they came back and they said, "No. We can't go there because we are not the people of that place" and so I think there's a one to one relationship here. It's as clear as the nose on our faces if we look at if we do value the natural lands in our state, in our nation and if we look at how they were sustained through time. Yes they evolved in a-- these fire dependent grasslands evolved into time a very dry climatic conditions but they would not have persisted in a way that the first European settlers found them. These places had native peoples not been actively engaged in manipulating these landscapes and of all of the things they did, among the most powerful and perhaps the most powerful scene that changed them and maintained them in the condition that they were in was fire to burn them and they burned them annually and they burned them in the fall or the winter by all the accounts I can see, it was rare to burn outside that time period but they also did many other things. One of the volunteers at Neil Smith Refuge when I was Biologist there brought me a photograph copy of a page out of National Geographic and it was of shoes. They were thousand year old shoes. Like three pairs of them, black and white photocopy. I have it hanging on my wall still. And Johnathan Yentis brought me this and he just thought it would be interesting and they are made out of, the *Eryngifolium* the rattlesnake master, so they would take the threads apparently and pull the leaves apart to make threads and these would be woven into shoes which I understand were-- if I recall, they look like they would be pretty comfortable so it wasn't just a manner of primitive people. I think we have a really weird understanding about primitive culture and native peoples, I do not believe at all-- but I think they are very sophisticated in the way they understood the world and the way they made it work for them and they burned for very pragmatic reasons. They didn't want to be burned out. They didn't want to, they knew they could travel through the savannahs and get berries and there was more food available for them and the wildlife would be more there-- and enemies could hide in the brush, if there wasn't brush there so burning was a very big part of it. So if we think we want to keep natural communities around we have to at the very least, we can argue about fire and how much fire and where and when and all that, we can argue about it and I have some very strong opinions about that but what I don't think we can argue with is that people are important and if you-- so let's see. What are their names... there's a paper that's been written in the last several years and now I'm forgetting the authors-- but it's a powerful paper. It has to do with the mesification of America. The open woodlands. The savannahs have been, well, here in Iowa, look at Stephens State Forest, look at all these places that we call forests, they are not. They are clearly not forests. They are

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dying savannahs. Some of those are being managed as savannah now and many more still are being hobbled by the label of forest and management for that purpose so we are losing a lot by not-- by not managing them as Savannah but these people talked about, when we let these places overgrow with trees that come in, you know, Basswood or Elm or Mulberry. All these other species of trees that are fire sensitive would not have persisted in-- at least as a tree in Iowa that these things are insulating our woods so the thing that happens is that the leaves drop to the ground, the canopy covers the understory. The understory dies, or becomes weakened, we have these ediled little plants that are very characteristic of savannah. Something like a creamy gentian or a lead plant even in open places but the leather flowers or the beautiful little clematis vine many species that are truly savannah species-- we won't find anywhere else really and then there's all these other, savannah's have the most diversity-- the most plant diversity and the [graze] diversity. They are highly diverse because they have places that are open and to full sun and so the things we think of as prairie species thrive happily in those sunny little oasis and then we have places that do end up in a healthy savannah that are a little more shaded and so the things that we think of as forest plant species thrive under those conditions and you see the, you know, the mayapples and the columbine and the blood-root and all those kinds of things in that area but then under the sun-dapple where the sun perforates through the oaks, down to the understory floor you have this movement, this moving pattern of light shadow that is constantly on the move from sunrise until sunset and so if you lay on the ground under one of those trees and you just let the sun wash over you through those leaves it would be, you know, it would be constantly moving, you would have sun and shadow crossing you all day long in different places and that's the condition that many of these species thrive under when the-- we don't burn, when we don't burn, when we don't remove the species that have grown into trees these things can't survive and persist and so the leaves that fall out won't burn. The mulberries, the basswoods, these things don't burn well. The leaves of an oak tree on the other hand if you look at a Burr Oak leaf. The Burr Oak is a very leathery thick leaf and it's very wavy and when it falls to the ground it lands and it's lofted up because of that stiff underlining structure and the air passes through those leaves under those little bridges and tunnels of air you know, allows air to move through and it dries the leaf but it also provides fuel for fire. When you have a layer of these other species that lay on top of those leaves, it's like a blanket of insulation-- fire insulation. One time, and it is-- it is a part of the dying of the from the east coast to the midwest, Milwaukee I think and Adams I think are the names of these authors they are documented. They concern is we will truly lose-- we will truly lose these fire dependent systems. That it's we are in the process of-- go ahead.

Drobney 3

I: Session Three. December 1st, 2016. Interview with Pauline Drobney, interviewer Jean Eells.

P: So talking about the Savannah. Leaves, the way they are set up, the way they are imperiled, greatly imperiled and we don't recognize them because they don't look like savannah. In fact, Naturesure—they track the degree of imperilment of natural communities and species and most of the savannah types are globally imperiled, very highly imperiled and some are considered to be extinct. Totally extinct from where they are, but they are still around, but we need to know how to recognize them and they won't be for long but they are no longer open and so much of it we think of is the canopy closure and that sort of thing so to connect these three things that I was talking about, the true people of the earth and you know, and if you want to do something about it. In Milwaukee's paper about messification he makes the statement that humans are a keystone species and one of the messages that I had given so many times in talks is you know that we are a critical species of the prairies, of the savannahs, of all these natural communities, we are an important—not just important, a critical species—and now there's a paper out, and I mean you know, Stephen Pine says some similar things but I was so happy to see that yes we are a keystone species of the prairies. So that means we have this disproportionate effect on the natural community, that we have I mean we can translate that into responsibility but I think it's really much more than that. What it really—this is our home and we have a role and the natural community will function or not function depending on whether we are there or not there. But of course we need to know what that functionality is. What that—how do we implement that critical role that we have and one of the things that scares me or one of the things that you know, we've had this election that has been really fascinating and frightening at the same time from the perspective of natural community—conservation of our natural communities. I worry about values, but coming down into a scale that is closer to home, the—when Walnut Creek Refuge was starting there was a lot of energy that came to there to put it together so the volunteers were the true people of the earth and they went out and I trained them, I cared and fed fed the leaders of the seed team. Leaders that I selected and taught how to know what plants looked like in seed and what those species were and they then organized groups of people and went out to remnant prairies that I arranged for them to be able to get to and then they started finding their own prairies and I would verify that they were, and they would collect seed and they were such dedicated people. True people of the earth, these were the people of the prairie and I remember—I remember that there was—remember that this was a time of a lot of energy, not just around that refuge but if we are talking just about Iowa, around the state, you know there was the Waterman Creek thing that that was that refuge that was spawned and kind of suppressed for a while and it has found new life and other projects that sort of came to life and all these seed vendors that came out of the woodwork and many of them were entrepreneurs and we would collect just individual kinds of-- the individual species for the refuge and I would you know, have to go through every single one. I would look at every single bag whether it was a combined bag or other bag and look at that seed to see if it seemed what it was and to negotiate for price and looked at every single site almost every single site. I actually had a couple volunteers

trained at one point to act as my, I guess, on the refuges behalf for some places I couldn't go to but I went to almost every single site and certainly all of the sites that were machine harvested. So there's all this energy with people thinking about doing seed businesses and these volunteers that were coming and people just started doing this on their own for-- on remnants and I remember close to the cemetery was a place that began-- I think was it Polk City, was one of those, it was a cemetery and this women, I just-- might have been a different cemetery-- anyway there's cemetery prairie, I don't even know who it was, who adopted this cemetery and she got the townspeople to gather to clean it up and took the trash out and cut the trees down and got it burned and it took an awful lot of work to do all of this stuff and they would do it for years and now she's not doing it anymore and so the true people of the earth are not there anymore and so one of the problems we have is that we have to also find a way to pass this on. So there's-- we know now that we are keystone species for natural communities. We are critical species of these places and we know that we can make a difference on remnants and we can even rebuild some resemblances-- not as good as the real deal, but we can get a lot better than I ever thought we could. There's some of them that look really very much like a remnant and but how do we, how do we-- there's an organizational way to do it which is like you know the nature conservancy or the, you know, some conservation organization, the Fish and Wildlife Service, the DNR, county conservation boards but I don't even know if that's that's just one piece and so much of the land is not publicly owned and I wouldn't want to think that those things are in public lands. So part of the question is how do we energize people-- how do people become energized-- we shouldn't energize them, they need to become energized and then you know, pass this along like a gem to their families or to the other inhabitants of their community or however it works but it's heartbreaking to go back to some of these places that contributed to the refuges foundation that now are no longer being cared for. I mean, some of the ones that were being cared for by-- personally by volunteers who are now either getting old or they have they have physical disabilities that they didn't have then and they can't care for them anymore. What do we do? I mean what do we do? How does-- what does as a culture, or as a community of conservation how do we get this community of conservation concept ingrained enough in our culture so that it isn't en-- it's great that people get excited and do it, but it's not a hobby. You know, it has to be more than a hobby and so that's the other part of going to a place a park, a refuge, and people come as volunteers and you can really build some values doing that and not everybody has their own place, but I think it's there's also something, a question in my mind that bothers me about going to some place doing something good and going home. You know, it's like going to church sort of, you know, you go to church, you say your prayers, and then you go home. Somehow that value has to get in in interwoven with, you know, daily lives and there's probably a lot of ways they can do that. Probably a lot of things I can think of to-- along those lines, you know there's a lot of different things I can talk-- I haven't even talked about the more recent part of, you know, things that are going on, I don't know if you want me to just continue or is there a parti..

P: Let me jump into the two questions that I've just made notes on here that'd I'd like to kind of circle back on and one is, I think it's really interesting to think about the evolution of what we understand of how to manage now, so much more sophisticated than back

when we were actually kind of excited to see a CRP planting that was all switchgrass [coughing] it was something and we could recognize it and we recognize that it had some reference to a native grass. So if you could talk about any of the evolution of that management and understanding, if there were key people that helped contribute to how to manage those areas and how they worked with their understanding on native plants and how some of that happened and don't be afraid to name some names, I know everybody says I don't want to name names because I'm not going to remember everybody, any that you remember is great to be able to name because somebody in the future can cross-reference and find, you know, they will eventually get a whole picture if they want to. Everybody's got a little piece of that pie.

I: So there's [coughing] excuse me. In terms of evolution of technique, certainly, goes without mentioning Daryl Smith had a huge impact that I mean-- there were different people in different areas but I guess I'm kind of pondering that just a little bit. The you know, we did think that warm season grasses were the way to go, we we've-- we learn and we learn on the backs of others and I guess that's kind of what you are talking about is what we learned and who backs we were standing on and--

P: A lot of influence from outside of the state or organic and emerged from inside?

I: Well, you know personally, I think one of the most astute land managers in the Midwest is Doug Ladd. I mean Doug is a sharp observer, he is easy to jettison anything that he finds is not useful anymore, that he finds not to be true, and he does-- he is one of the brilliant minds for me, I finally, when I was working up at UNI I got a leave of absence so I could be on his burn crew. It was his first burn crew in Missouri Nature Conservancy and he was the director of Science and Stewardship there and he still is and I went there because I wanted to learn to burn woodlands and so that was about 1990 or 89 maybe, somewhere in there and so we burned. We burned woodlands in February and March down there and he just-- I learned-- I have a great deal of respect for him and I just, I just found myself wanting to just pick his brain constantly, you know, 'cause he had and still has so much to offer. I worked with him through the years on many projects and he's-- I think a key mover in the Midwest. I think that Gerry Wilhelm is another person that is incredibly astute, and he's been unafraid to push ideas that others scoff at and I think that in most of his ideas, he's correct. There's some things that I don't agree with in terms of what, you know, his approach, but mostly I think he's right on and one of the things that I'm really excited about now is the relationship of plants to insects and Gerry has teamed up with Laura Rerieka and so he--

I: Help me spell her name.

P: R E R I E K A. Or something like the R C K A. She worked with the Illinois Natural History Association-- or Illinois Natural History Survey and she is-- she's just a phenomenal mind and for her, it's invertebrates. So she knows that if you want to know about the invertebrates of a place, or a prairie or a savannah you have to be there at a particular time of day when the humidity is just right and the heat is at a particular place and all the conditions are right and maybe you won't see it but maybe you will. So

there's like all the stuff that we think we know, you know, there's so many tons more information to know and invertebrates, I think is an incredibly important piece, I don't-- I think that we might be off the track on some of the things we think about invertebrates and Laurel is a key person influencing my thinking on that so Gerry and Laurel are working together to write a book and they say it should be done like now. I was talking with Doug Ladd 'cause he used to publish with Gerry more, he doesn't so much now, just not in the same places, but so it's the *Plants of the Chicago Region* and so Gerry is updated that but Laurel is putting in invertebrates to the plants and so it's this monumental work it's been ten years in the making and I just can't even fathom. I can't wait to get my hands on a copy of it but it's-- it's a really important thing, you know, one of the things I like about the *Plants of the Chicago Region* is there's all this-- the associate species, now if you can look something up in there, a species and you can look at what were found as associate species in many given place-- in many places based on the [barium] sheets and then there's some comments about it so the addition of the invertebrates to that is going to be just phenomenal. You know, I think in terms of the way our understanding of the world has progressed, in some ways we have a curve and I'm making a motion with hand coming from low and swooping up to a high place. We are learning more and we are getting more sophisticated about the way we learn things and in some ways I almost feel like we hit a bell curve and we are headed down. That we are kind of going backwards a little bit and maybe it's-- maybe it's in the execution of management, we maybe know that we need to manage things more now but you know, there's-- I remember it when I was-- goodness-- we would go out when I worked at UNI when I was in my twenties and early thirties and we'd go out to clay-- to burn prairies, you know and my friend Ethan Perkins who was the director of Science and Stewardship for the nature conservancy at the time, would lead a burn out there and you know, I remember burning out there sometimes with [TNC] and other people and there's a photograph that one of the publications I started at the Iowa prairie Blazing Star which was a prairie publication and only maybe two copies came out before I got the job at the Fish and Wildlife service so I couldn't do that anymore so I had to let that go but there's a photograph on there of me that was took at Cedar Hills Sand Prairie and Daryl Smith and I-- somebody had given him-- split these fire hoses in half and so-- and hooked them onto a handle, they had crafted a handle and bolted it onto this chunk of fire hose and that was what we used as a flapper and so you beat the fire down with that and you know, it wasn't a mow lane, there was I think a-- well maybe it was a mow lane for part of it at least and part of it I think we were just cutting along through the prairie, which I found on my own a hundred acres that I managed, but that with a flapper like that and this thing would-- you put it down on the ground and all these sparks fly up as you you bring the hose up off the ground so it was like, acted as a vacuum or a suction and we just had flames everywhere but you know, it worked enough. So we came from these very primitive ways of burning for example and now so-- you know, we have flappers, we have, we have burn-- burn training, fire training-- I'm trained as an RSV3, a burn boss type three. And now-- and I was in charge of the burn program at the Smith Refuge for a few years just so I could understand the concept between burning and ecological objectives because there needs to be sometimes if you are in an organization like the Fish and Wildlife Service but so we've come to a place, even people on their own land can burn differently if they take the time to figure it out and my

understanding of how fireworks is so much better than it used to be. Clearly it comes with experience but I have been training, but really to get fire on the ground, which is critical, peaked probably ten years ago I think, and now it's gone downhill and we don't have fire on the ground, that's another way to lose everything and so now in in uhm, agencies, at least in some agencies the qualifications have become ridiculously high so that you actually have to go out on wildfires just to maintain your burn certification and never mind the burn bias type three, laugh at that, you have to be a type two of above and it's getting to the place where-- so now, there's funding has dropped out of that because the fire funding for federal agencies anyway is based on wildfire and you know the state agencies aren't too far behind on that sort of thing I don't think. It's kind of hooked to the same wagon and so I'm really concerned that just in terms of technique, we've learned a lot about the technique, but we've gotten ridiculous in terms of regulations and I say this-- heresy for me to say this in my organization but it's true and so there's less people to do burns and people can't meet the qualifications, so that's a problem. It's a problem when people look to people who know how to burn and can't get people to do more burns. I guess maybe part of what we need to do-- I mean, for me, in agencies-- need to look outside fire funding to get outside wild fire funding's somehow, it needs to be a natural resource funding issue if it's people on the ground, I think we need to find ways to form these organizations like they did in the SIOSA the South Iowa-- Oak Savannah-- Association?

I: S I O S A?

P: Yeah, and they are-- so these people actually, the-- Greg Pattison down with the-- he's with the Fish and Wildlife Service, the Iowa Private Lands office there and he's-- Southern Iowa has tons of possibility, if we want to find a place to do good natural land management-- go-- you know, we should be focusing some funding, maybe targeting some funding towards private land owners to get to do to do management down there SIOSA seems to be doing pretty good. So far the momentum has kept going so maybe that's part of the antidote to that problem of you know, trying to keep that momentum, 'cause they support each other and they are rooted in a place too which makes a big difference so that's one thing I think is a problem, we are in the early days, we collected seeds and we could find things on-- in a remnant-- natural communities, I worry that when we collect seed from remnants by using equipment, the same equipment moved from place to place that we have the potential to-- I worried about this when Walnut Creek started and I did everything in my power to not make that happen-- to make that not happen, but to have-- meaning to not spread any weeds but I think that we could end up, you know, it's kind of like the ecological equivalent of aids to borrow equipment and move it around because it can't-- it's really hard to clean those things out and you see if popping up and I've seen it-- I think it's come from some purchased seed some things like sericea lespedeza which is just about impossible to get rid of. It's-- so and different places so that's one of the concerns that I have, we've gotten good-- we've gotten pretty good at being able to collect seed but that's a problem. In terms of techniques, you know, planting in the fall, planting in the dormant season-- produces a tremendously different result than planting in the spring-- but if you are going to plant in the spring-- some of the research we've done associated with some of the work I've

done and my colleagues is that we've learned that-- a study at Neil Smith Refuge and three stations in Minnesota where we looked at different planting techniques like fall spring planting different seed mixes in terms of diversities and drill versus broadcast seeder, you know really broadcast seeding is is is the way to go. In Iowa actually in the summer, if you are going to do a spring seeding, I would recommend--- what the data showed us was that actually drill was better. I would not, if I had any choices with doing a planting, I would do it-- I would always plant in the dormant season using a broadcast seeder and there's a lot better success with getting forges and getting them early. I've seen things that were sown in January, having like-- pale purple cone flower and butterfly milkweed and you know, the purple prairie clover-- blooming in the first year! In the first season! That was something that we could never have seen in the olden days. And certainly the proportion of grasses to forage grass should be really at least the major tall grasses be the minor component of the seeding as opposed to the major component. When Walnut Creek started there was such pressure to perform my project leader wanted thirteen pounds per acre of warm season grass. He wanted it to look like a lawn. That's not good. That's not good for us. I wanted innovations that-- in talking with-- so one of the people that has been influential I think, certainly to me-- Ed Wade? Ed Wade? Doug and Dodd and then Doug Wade.

I: Doug Wade.

P: From Prairie Moon. He's always so willing to just sit and chat with me and we would chew over ideas and thoughts and he would share with me his insights and amazing. Amazing guy. So I learned a lot from Doug. We talked a lot-- we talked about the possibility of something like using like Canada Wild Rye and I think, I think, that at Neil Smith Refuge was the first place where we tried it on-- you know, I didn't want to have thirteen pounds per acre of grass so I was looking for something else that would allow other things to come in. So it turns out that it does work as a short term grass species that establishes very quickly and als-- and establish around, I think three pounds per acre will be a solid stand in a couple years, but-- and you can burn it so it will drop out of the mix or it will severely reduce the amount of that in this same research study I was talking about, one of the things that we demonstrated in that study was that Canada Wild Rye actually does suppress Canada Thistles and other exotics and so it dropped out and that protective status left so but it's a short term species so to do a better job, we should be putting more cool season native species in our mix. It-- these things germinate and grow in the same schedule as a lot of the troublesome exotics we have. There's some species that have an Achilles heel and some that don't so Canada Thistle-- the Thistles definitely have an Achilles heel. *Sericea lespedeza* a legume that has a fire, it's adaptive to fire and many of the lespedezas are. and so *sericea lespedeza* is a-- grows like *Lespedeza capitata* the you know, it's the round headed bush clover, it doesn't have the same-- that one you don't have to go after with, with chemicals I'm afraid and there's others like that, but in terms of managing, too, another thing that is really important I think, again is that dormant season burn and what Laura Rerieka shared with those of us who came to our talk over in Western Iowa in the Loess Hills-- anyway, I can't think of the place-- was that the invertebrates the greatest diversity and those that-- those things that are really associated with prairie or

savannah, these fire dependent natural communities. She find the greatest diversity in those places that are burned annually but in dormant season and the theory is that that removes the the fuels that will otherwise incinerate species, you know, when you do burn them. She says she understands that managers have some constraints in terms of funding and that sort of thing so the second best is to do it every other year, but if you wait until the third year, you really are absolutely you know, that's-- you have enough fuel built up at that point that you are incinerating pretty broad scale so when you have annual fires, you end up with these, you know, people-- it's always like arm wrestling patchy or not patchy, but it is patchy. Certainly you can end up with something in a drought-- a doughty year and you might want to be really very careful about when you do that, but you don't have to burn on the most fire prone days. The driest you know. It was a year ago when the burn boss at Neil Smith Refuge or maybe it's two years now. He was just, you know, trying to get all kinds of burns in and he was not burning on the best days and I was kind of actually kind of thinking-- I was just watching-- the beauty of not being a part of the Refuge staff is I can detach myself a bit emotionally and from, you know, the dynamic that happens among staff members and watch and it is more-- it's really interesting to see what happens and... So he burned and he burned in the dormant season, anytime he could-- I mean, there were spring burns too but-- he burned in times that I wouldn't have recommended to burn because it was just not a good day to burn. Too cool, too wet, it's not going to burn but it did burn and what happened was, even in some of these plantings that are full of tall, tall grasses, they were patchy. They were definitely patchy, and I walked out there and spent a couple of days, I mean, parts of a couple of days walking around and photographing this-- 'cause what was really interesting is you could see-- I could see places that were burned down to the ground, places that were, you know, maybe a foot tall, just the tops burned off and places where you could tell that the burn wasn't moving really fast or really hot, anything with stalks like like round headed bush clover, those kinds of plants of that consistency of stem, the stems were un-burned, I mean, they were still there. There were animals trails and there were different patterns of burn of course, but the animal trails, but just a whole range of patches that were the size of this table-top to you know, maybe twenty thirty acres and I looked to see why it would stop in this tall grass in this place and I could see no reason because I know this place pretty well and you know, that grass that's one this side of the burned area relative to that isn't really any different, you know, so something changed it, maybe it's where they dripped a line, it didn't look like that's what was going on though. Anyway, it happens. It especially happens in savannah, but it would be-- in most of the studies, I've looked in the literature and we have a lot of studies on burn rotations but we don't have-- I'm not-- I think there's one study that does-- did annual burns but it was the design of the planting and it was the designed like they were burning little squares, which is very different than if you are burning a landscape and so I am not aware of a study that has included annual burns in the dormant season. So I think there's a lot we don't understand about that and that would be worth pursuing and really looking at the invertebrates and seeing, you know, is this true or is this not true from a you know, from a research perspective, so there's that...

I: Because the Refuge was a big buyer of seed, can you talk about the relationship that you think, or the affect that you think that had on the seed industry, native seed prairie industry. Native plant industry in Iowa. And can you help position the time frames that some of that was occurring, 'cause it intercepts with the DOT's specifying for roadside things that helped drive, and it was kind of chicken and egg before that-- as you know, do you have native seed? Is it available? Where can you find it? And the growers weren't ready to grow it because nobody was specifying it so it must be-- so can you help tease out a little bit more of that time frame.

P: Yeah, so you know the-- you know, as a timeline, there's that-- the Iowa ecotype project started-- Daryl Smith and Kirk Henderson started that-- well Daryl did and then Kirk was two directors-- or two IRVM coordinators later. So that must have been at about 1989, I'm guessing and I was the first person to go out and collect seed for that project. I went to all these different counties and collected three species of seeds-- those three species to start those three plots so then beyond that I was hired by the Fish and Wildlife Service in 92. I remember talking with Daryl Smith, the way I remember this happening without actually checking dates is that Neil Smith Refuge or Walnut Creek at the time, started and so my job as my project leader told me was, "Find seed and figure out how to get it here." And so it was a matter of kind of beating the bushes trying to find people who were interested, which was like okay, how do you know if peo-- are how do you-- and we couldn't be-- had to be very careful not to be favoring one potential producer over another because it's illegal so there's a lot of talks, they gave a lot of talks and people sort of started coming out of the woodwork. I remember talking with, oh gosh, what's his name? The-- man, I hate it when I forget things, the living road way trust fund.

I: Steve Holland.

P: Yeah, Steve Holland. Yeah, when he first was hired at UNI and trying to get him-- I was trying to have a conversation with him about, I don't know, something important to me, maybe it had to do with local eco-type or something and I'm trying to remember if that happened just before, it might have been just before I was hired as the refuge or else just after but it was about that same time, I think. It was kind of in that same vicinity and so we started getting the-- have you talked to Steve? Yeah yeah yeah, I betcha. I bet this will be interesting for you then, the-- Steve-- so the refuge I think, I started getting seed going first, trying to get the seed producers to grow seed, produce seed, collect seed, and it wasn't too long after that. It was almost concurrent I think, but I think he was just a little bit later than that when he started doing really the push with the living roadway trust fund and that's another person who has made big differences in Iowa, I think is Steve Holland and he came right up from an entirely different place, but really made some big differences, but so the whole process of trying to get seed-- is this part of what you are interested in-- or?

I: Mhm hum.

P: So what was kind of difficult, we ended up you know, I kind of came up with this and there's more than just me, but it seemed to make sense to have most of the eco-type zone for the refuge be you know, the Southern Iowa Drift Plane and then so, but it was, there was so much land and we didn't know, we really didn't know what it would take to reconstruct prairie on the [crap] lands and connect the remnants as small and degraded and isolated as they were. They cut off the Mississippi kind of flood plane area 'cause that was another different-- a different type of zone and then the Loess Hills was different and then-- but it was really only about fifteen miles from the edge of the Iowa surface so it included a county above the drift plane and across the state because possibly there would be [property exchange?] would be pretty high was the rational and so so with that in mind there was thirty-six counties with that local eco-type zone and-- thirty-eight? thirty-six? Somewhere in there. And the uhm-- Dan Allen was the first person to come forward and certainly the seed dealers made a huge impact on the, on the ability, there isn't any other state that's had the sort of history that we've had and so the seed dealers, Dan Allen was the first one and he offered seed for sale and in fact sold seed to the refuge in 1992 and when I was hired, it was actually before I was on the job, I came to the refuge and the project leader said, Dick Burgess, okay, tell me where you want to put this, okay, well he had a selection that made some sense but it was crazy you know, but Dan Allen had a curious enough mind that even though cultivars were all the rage, he just kind of wondered what would happen if he collected some seed from, you know, that hadn't been planted and-- to see if he could grow it and people said, no it won't grow and it did grow and it took him a few years I think to get it to really take off and be robust but he was the only person in the state that had-- or anywhere, that had seed that would meet our local eco-type specifications and I had to write those specifications and they were hard to write because again, you couldn't exclude people for whimsical reasons and there was not desire to do that but it was a matter of seed had to come from these areas. One of the fears I had was at a place-- say for example a big seed producer out of Nebraska would come in and say I got it, or I would get it for you and then that whole contamination of seed source could happen. That was one of my fears. They did contact me, it turned out they decided they didn't have what we needed and they didn't pursue it. Actually, I was happy to work with the smaller dealers and local dealers and really to stimulate the economy was also, for us too, that was a good thing. So Dan started poking around, doing more...

I: Who were some of the other dealers that you could name at that-- that come to mind at all.

P: Yeah. Gene Kromray was very much into it and interested in it. Each of these people had a different approach and different territories. John Osenbaugh was another big one, and you know, I wouldn't, I would go and he-- they had to not harvest with the same equipment they harvested with cultivars and they had to have it separated-- it you know, it was complicated trying to keep it to be appropriate species diversity but also genetic diversity and so yeah, John, John, he bought a whole new cleaning plant and put it together for the purpose of cleaning refuge seed and-- let's see some other-- so those were the three big ones. I'm trying to think if I'm missing-- Jon Judson, came into the scene a little bit later than those three-- another tremendous influence on the whole, Jon

is amazing, he's amazing. He has a different approach because he is-- I mean, his business is small, he gets this whole local eco-type thing and he really seeks to try to keep ecological integrity in the forefront as far as I can tell and he's trying to buy up as many remnants as he can in his local area and he uses them for seed production but it's not just about that. So those people were key people. I mean, there were other people that were you know, there were all these people who were seed producers on a hand collector scale so those are the people that were the big producers that harvested by machine. I'm trying to think if there is anybody, I don't-- I think those are the-- well eventually-- Prairies Forever, what's his name? Gosh. I almost had it. Swanson.

I: Andy?

P: Andy Swanson. Kind of started working with us a little bit but he was a little further north, and you know, he had some in our eco-type and he was very careful too about keeping things separate. Then you know, there's newcomers on the scene, like I say, what's his name from Jasper County... so but there was-- I don't think of his name, anyway those people, and then Karen Diamond and what's-- there were a number of people who were individuals who produced seed and a guy named Bass-- they would bring them in-- one of the hardest things was this guy who was a really good hearted man, I just, I loved him dearly, and he brought in, this whole batch of seed, this *liatris aspera* or *picnistacia* I can't remember which one but he brought this whole big bag of liatris he had picked to sell and you know, I looked it over and, you know, at least seventy-five percent of them at least on my take-- piles were empty and I said I can't give you the price you are asking, it's not there, but you know that was so-- what I had to do was negotiate with every one of those people. I couldn't negotiate-- let me correct myself, I couldn't negotiate, let me correct myself, but what I could do was reject or accept what they asked so it wasn't a matter of my negotiating that would be another illegal thing and I was very careful not to do that but it was hard because they would say, "Well, how much would you give me?" I'd say, "Well, what would you offer it to me at?" Then, you know, so it was like that sort of thing, and I can ask that question and then I can tell them if I'll take it or not take it but it was-- it was really interesting. I got to know seed producers very well and there was, I can't think of a stinker in the bunch. I really, I would go out with the people who were machine harvesting-- were required to show me their, each of their fields and every single one of them and the thing I wanted to make sure they actually represented as much as I could tell, so I had to develop criteria for understanding is it a remnant? An inter-seeded remnant? Or a planting? It's really interesting but you know, I'd go out with Dan Allen for example and we'd go out and we'd be up by sunrise and we would go until sunset looking at different fields. One time he brought-- brought me out and we jumped on horses and we went out that way in this big expansive area but to answer your one question about Steve Holland and his seed, one of the things that was a thorn in Daryl Smith's side was the fact that I wouldn't accept seed from there, you know, Iowa eco-type zone because I couldn't-- 'cause it wasn't-- you know, and Steve Holland would just, and I tried to explain it to him and you know, this is-- it's good seed. It's you know a lot of it is within our eco-type zone but you are taking things from the Loess Hills and from over here and Loess Hills eco-type, they-- it evolved in its own set of rules and so we are trying to keep things that evolved

under similar conditions. We know-- as best we can, so maybe we are being too careful, but that's okay if we are not careful enough we can never go back. So there got to this weird dynamic between you know, that decision and Steve Holland I think kind of, at least for a while had had-- this caused problems, I'll say all these things-- it was-- there was a problem because he interpreted that as at least for a while as my saying that the Iowa eco-type seed was not good. And that wasn't what I was saying, it's perfectly good seed and grea-- thank goodness that the Iowa eco-type project was going on and those zones were there and they could be used for a lot of projects but we weren't going to buy it-- just for that, I wish we could of, it would have helped a lot and then Daryl Smith would just be pulling his hair out and saying, "Can't you take the seed?" No, I can't take it and you know, it just, there was just a misunderstanding.

Drobney 4

I: Session four. Interview with Pauline Drobney, interviewer Jean Eells. December 1st, 2016.

P: Well, there's just a couple of things I guess that are kind of miscellaneous things. One thing in terms of technique that I think is important and that is-- it may be that our-- the convention of forty seeds per square foot is way off. Way out of whack. It's you know, we go to these-- we create tradition and then we-- and then it becomes, it's just the way everybody does things and then different organizations create their own versions of tradition and so you know, how do you turn Pheasants Forever or NRCS or you know, DNR, the Fish and Wildlife Service or the Nature Conservancy, how do you turn the boat? It gets to be hard because we are just so ensconced and one of the things that we are doing in the Fish and Wildlife Service now is this-- we have focuses on natural community conservation, we have some different groups. One group that is a relatively new group is this prairie re-construction initiative and we've had-- we've got something like there is seventy-eight organizations that have been interested in it, thirty-eight that are apparently joined. I'm the Science Coordinator for this and there's a couple of project coordinators and we had a-- one of the people that I've kind of turned to and through the years when I run into him is Scott Weber and he used to work with the Wisconsin DNR and was like the seed production person for the DNR and he would put together seed prescriptions and mixes for various places and he's a very sharp person and is somebody that we brought in for-- we had a meeting, we thought at max we'd have seventy-five people and we had a hundred and sixty-eight people at Fergus Falls in January and I couldn't believe it, but so just a lot of interest in this, but he's the person that we brought in for kind of a key note address and I wanted him, very badly to be doing that talk because he will rattle our cages and his philosophy is-- and he went out-- he pulled no punches in his slides. He would bring out Tall Grass Restoration handbook, wrong, and then he would just show that and he would just quote the passages and he would just say this isn't correct and this is why. And so one of the things that he pointed out and he showed us, and I agree with him-- my exp-- I articulated but he said, you just start with whatever it is you want to have on the ground. If you want Western Prairie French Orchid, that's what you put on the ground first. And you don't put in forty seeds per square foot of a whole bunch of stuff and you'll get what, Western Prairie French Orchid. If you want downy gentian, that's what you put in there. If you want a mix of things, you put those things in, but don't put in all these other things and he says forty seeds per square foot, you got forty seeds that can't grow in a square foot and so-- which is something that always kind of bothered me and I've used that as a shorthand knowing that a lot of the seed I put on the ground is probably not necessarily filled or because it's machine harvested and I don't know-- it's but I don't know, but in my experience there is one planting that at Neil Smith refuge that was one of my last seed prescriptions it's eleven years old now and it's, it really does look very much like a remnant and it has spring flowers and it has fall flowers and people come out and they go, huh. You know, it's just-- so there's ways of doing it and that one was different for me because I just put tons of forbs out there and I didn't put very much grass and 'cause I thought it was going to be a big showy place and that was one of my last chances and you know, I didn't do that a lot, I wasn't able to because of the areas

we were planting and because there's that tradition you know, people would resist that kind of a mix, it's too expensive but if you have to manage it forever for weeds and it's not-- you know, there's a lot of issues depending on what your objectives are. If you want a diverse prairie then if you invest in it in the beginning, my philosophy is then you'll get it and you'll get it pretty quick and you'll have it in the end but otherwise you'll fight it forever. Anyway, that was just one thing I wanted to mention and a way of learning about prairie that is a little bit different paradigm in terms of research is that we are starting this database and this had to do with plantings but-- and nobody remembers what they did even if they write things down, they lose some of the details, where'd we spray, what did we mow, when did we plant that or maybe the operations person ran out of seed halfway through and didn't tell anybody so there's these gaps of information but if we really want to know the best way to make things happen, we should find a way to let everybody write it down so we got this database funded and anybody can-- there's a serious prairie re-construction person can enter data and if they decide to do monitoring, which is part of what we are providing some easy, medium, and hard ways of doing-- depending on what your question is you have to use one or the other method. Then you know it'll provide automatic feedback about how well your planting is doing but then the other part of that is is that there is a way of being able to have if we have a lot of people, hoping a lot of people participate, we are just testing it now, then there will be a way of getting research funded that can test you know, across the board what wor-- without having our biases come into it as much, you know, 'cause Nature Conservancy's going to enter some and just individuals can do it if they want-- anyway that's just one different way of looking at learning to learn quicker and with more people doing that and then you also know what you did 'cause you wrote it down in this database-- anyway, so some of-- in terms of some of the people that come to mind, I'll certainly, one person out of the state that I haven't mentioned, Steve Packard has had a tremendous influence on-- oddly, most people don't remember his name anymore, they don't even want to mention his name, people don't know who that is-- which is also kind of a frightening thing because-- so this thing that you are doing may be a good thing but you know, he was one of those charismatic leaders and if we lose those and we don't even remember who they were-- you know, it's just, it's concerning to me. Well, certainly Karl Kurtz has been a big a big influence, uhm, we didn't use his seed much at Neil Smith Refuge because he had used cultivar little blue stem in his foundation seeding and so you know, we are just trying to be true to our our eco-type zone requirements and we weren't able to-- he has sold seed from his his original harvest site at Doolittle, which is a refuge, he's done a lot because he's spent a lot of time thinking-- you know, one of the things that is really different too and I can say this from personal experience and I can say it looking at Karl listening to him and from my perspective working on a larger project and now working with people in eight states and actually beyond that area that there's a matter of scale in terms of success and there's a lot of different ways to define success but if-- the way you manage a place, if I have you know, my little thirty acre place where I live, is plenty of effort to to-- for me. To keep me busy, to do a lot of stuff, you know, I and my family also manage a hundred acres, ten of which we own and the other eighty-nine Cindy Hildebrand, Roger Maddox owned but they kind of-- we always teased them 'cause somebody said, yeah, they think you own it. I say that's okay, they think you own it. So we both own it but it's in different ways. We do the

management, we have for the last twenty years and that's a remnant. The one where we live, the thirty acres, there's a savannah remnant, very beat-up and then there's a little bit of prairie species in some of the open areas have been burned enough and grown, some species have come up but there's a lot of you know, area that needs-- it just needs a lot of work, but the one-- the hundred acres is much better but there's places that are in good shape and places that are not in good shape but that's that's again, we are doing it kind of as a family-- kind of as a family-- we are doing it as a family and then we invite friends in sometimes to help us on things like burns. Carl Kurtz and Linda Kurtz do their their-- what two-hundred and fifty acres? Mostly themselves and they have some people come in and help with harvest and some other things, but and so the lessons that he puts forth in his books are very different from the sorts of lessons that would be put forth in a book about Neal Smith Refuge for example because you can't go out and weed every acre like they do and it's a lot of work for them and I totally appreciate that but on, you know, thousands of acres, it's a lot harder. Now Nachusa does a good job. Nachusa in Illinois, TNC preserves, but they use volunteers.

I: Might have to spell that one.

P: N A C H U S A. So Bill Cline is the manager there and they have this paradigm where they have, where they let volunteers, or they ask volunteers. Volunteers come in and they adopt an area and they get to make all the decisions. Now they have to have-- there's side boards, it has to be a prairie project, you know and seed has to come from their area but they can decide how much they want to work on in a year and that sort of thing and I think that's really probably a pretty good paradigm to follow if we wanted to do some of the things we've talked about. Cindy Hildebrand is-- and Roger Maddox. Cindy is just a-- she's a powerhouse and she she has been somebody who has made a lot of things happen. She is generous and she-- she's a bulldog to run up against-- to my eternal embarrassment she had to stand up to my hometown against dredging about making some of the lakes the little pothole lakes there into recreational lakes and they were very rude to her-- it was just-- but she would do that. It's not like she likes doing that but she's one of my heros. I think very highly of Cindy and you know, she and Roger bought many pieces of property, Cindy actually when I was just, I think I had my own business then and I was-- that was during that time and there was a Society for Ecological Restoration meeting going on in Chicago and she asked if I was going, and I couldn't afford to go, right then, and she paid my way. So she and I roomed together. We ended up in the motel with-- turned out, not only was our meeting going on but there was an ALKANON meeting going on at the same time and we were next to the party room-- anyway, she brought ear plugs for the both of us. Anyway, it was just, she's just an amazing person and she works a lot in the background. Her heart is pure gold-- I can't say enough good about her. She's been a huge mover and shaker in some ways that we see very visibly and in many ways the under-current of the whole movement. So she's a big one. Yeah, the-- Bill Haywood. Now I knew Bill-- worked with Bill-- my master's thesis kind of goes back to the early days of roadsides and that was my-- I did work inventorying all of the roadsides in Black Hawk county. Roadsides in Black Hawk county and that was when Bill Haywood and his-- his associates had worked on you know, trying to figure out this whole tradition of spraying everything too because of

thistles and of course they are not killing thistles but they are spraying everything anyway, so that was when that whole movement started which was kind of the beginning kernel of the roadside project so I mean, he did a lot of work that way. I mean there were really a lot of people and I mentioned that this energy-- energy begets energy you know, so we do-- we work on the backs of each other and what's her name from-- she worked in the National Roadside Office, when-- National-- what's her name, she used to work for Ladybird Johnson, she worked in Minnesota. Gosh. Her philosophy was and I think this is a good one-- uhm, if you can't convince somebody what you do is you use somebody else as a precedence and then that person-- so then you make some success from that and then somebody else uses you as a precedence and then you know, so you just keep establishing precedence's and you know directing those precedence's towards objectives that you want to accomplish and yeah, and Diane Blankenship is another person who is, you know, she's another bulldog and she's worked tirelessly at so many things with the prairie network with Loess seminar, with just the nature conservancy and just so many things and again, put her whole self into it. She's-- hum-- forgot what I was going to say there but she's-- oh I know, one of the things that is impressive to me about her is I really truly think it's okay with her to fade in the background. I think it's okay for her to do that and she's-- she'll take the medial back jobs and she's not afraid to let somebody have it if she thinks there's you know, something is a kilter, so she's good in that way. Yeah. You know there's so many things I think about when I start talking about these things about prairie and natural communities and what have you that you know, if we wrote the book of Iowa, prairie and Savannahs, sedge-meadow, conservation, we'd have a fascinating but very big book. Probably lots and lots and lots of volumes but it is about the-- well this goes back to the true people of the earth doesn't it? What we are talking about is these true people of the earth and the people that have inspired people and have worked in small and big ways to try and make things, make things better. And there's a lot of people that aren't-- that are nameless, that are the-- that's like the-- it's like the water, you know, it's like the drops of water that make the lake or something because it's-- there's all of these people that we identify as kind of movers and shakers but it's the lake-- it's all those other people that make the lake, you know, it's just a bucket of us that go into the other part. Yeah.

P: Cool. Hit a stopping point?

I: I think so, I think so.

P: I'll go ahead and...