

**Oral History Interview of
Nick Parker**

**Interviewed by: Andy Wilkinson
June 24, 2013
Lubbock, Texas**

**Part of the:
*Agriculture Interviews***

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Transcript Overview:

This interview features Nick Parker who discusses different agricultural co-ops around the state, the drought, and his ideas for alternative energy.

Length of Interview: 01:29:18

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Keywords

Agriculture, Air Force, Texas Tech, farming, wind energy

Andy Wilkinson (AW):

I said no, tell him it's just another wild ass scheme that I've got—

Nick Parker (NP):

[laughs] That'll get his attention.

AW:

She laughed and said that's like right up David's alley. But I just left a number for him to call me, and what I'm gonna do is if it's okay with you, is get him—I'm just gonna briefly tell him what your ideas are, and that I would love for the two of you to get together and I will join you if I can.

NP:

I would love for you too.

AW:

But he's a far thinking person and I think he is without question the best mayor we've had in modern times.

NP:

Well he's part of the "Imagine Lubbock Together" team and things and gave the final report and stuff.

AW:

Yeah he's really terrific, this is something that he'd understand and he would also, he would sympathize with the run-around you've been getting—

NP:

Well, the problem is short thinking, and it's how do I make money on it within the next five minutes, not what are we going to do tomorrow.

AW:

Well we've got a real bad habit in this town right now saying no to everything and you know if you read the history of this place, there's a great book by a fellow named Don Hampton Biggers. The book is called *The History That Never Will Be Repeated* and he was a journalist, but he lived in Lubbock around the turn of the last century and he was part of the Lubbock Business Club that was the Chamber of Commerce basically. And one of the things that he said was that, the reason that Lubbock was successful, and will be successful is because we've got people here that think in the future and you know it's a really interesting thing to realize that in that day and time, there's a guy that was looking way ahead, this was before Texas Tech you know, before a lot of

things. But he said communities in this area, these are people who are thinking ahead. And he said that's gonna make the difference, and sure enough right after that comes the opportunity to get Texas Tech and Lubbock succeeds and therein lies the difference between Lubbock and Plainview and Slaton and Brownfield and you know a lot of other towns around here were at the time as large or larger than Lubbock was, but my contention is that in today's world we wouldn't get Texas Tech-- you know.

NP:

I think that's true. Every place I've looked and the people I've talked to, it's all negative and I told you I went to visit with George Carpenter, well there were two reasons I went there, I had already spoken with Ron Betenbough and I went to Ron because I see him as a person that's doing things in the community and he's very supportive of things like [inaudible 00:03:24] ministry and Habitat for Humanity and issues like that so I thought Ron would be a person that could give me some feedback and guidance and things. And he told me I should visit with George Carpenter. George Carpenter is a Lion. So I thought I'm a fellow Lion, maybe that's a door that I will be able to open and go in, and he was very gracious to let me come in, just right now, but you know his interests were [inaudible 00:03:55] he said you know this is not the place for wind power, [inaudible 00:04:00] winds down in Corpus, it's got the best wind in the state. So that's where wind power ought to be and so we've got wind power all around us, and it's growing every day, but there seems to be no recognition that has any value in the city of Lubbock. And then the same thing was true about water and greenhouses, nobody would put one in up here since you know, there are no deep pocket entrepreneurs that want to throw away money, not in Lubbock, Texas. So if you're gonna do something like that, take it down to south Texas, it doesn't matter about the soil, you're gonna have water and put whatever you need in the water, nutrients he said that'll be down there. So I didn't see any support for doing anything here.

AW:

Yeah, it's gonna be interesting when they turn the tap and nothing comes out. How the consideration will be there. Let me turn the machine on cause I always get interesting things going before I think to turn it on, I need to slate this by saying it's the 24th of June, 2013, Andy Wilkinson here with my friend Nick Parker, we're in my office in the Southwest Collections, it's early afternoon, and I want to get a little information so a hundred years from now people know which Nick Parker we're talking about. And then we'll talk some more about what I was interested in visiting with you. When's your date of birth Nick?

NP:

Six, thirty, forty three.

AW:

Yeah, you're about to have a birthday.

NP:

That's right.

AW:

And so am I, mine's Wednesday.

NP:

Well—

AW:

We're cancers.

NP:

Yeah we are. I don't know what day of the week mine is but it's the thirtieth, whatever day that is.

AW:

Well it's—

NP:

Today's the twenty fourth—

AW:

It's a Sunday.

NP:

Sunday, okay.

AW:

Cause mine's Wednesday. Where were you born?

NP:

I was born in Blytheville, Arkansas.

AW:

B-L-Y—

NP:

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T-H—

AW:

E.

NP:

E-V-I-L-L-E.

AW:

Blytheville, Arkansas.

NP:

Uh huh.

AW:

And where was that, what part of Arkansas?

NP:

It's in kind of north central, east Arkansas, so it's over on the Mississippi delta flatlands. And there was—

AW:

Isn't there a Newport? That's in the north east, in the north east part.

NP:

I don't know about Newport. But Blytheville was an army air force base during world war two.

AW:

Is that why you were born there?

NP:

That's why I was born there, my father was not in the military, due to he had a hole in his eardrum and an undulant fever, so two different things an undulant fever if you know is brucellosis or bangs disease, and so at that time, your local doctors didn't know how to treat it. Later on it was taken care of with sulfur drugs, but it would come into remission and he would be able to go out and do public work and then it would flare up again and then he would move some place close to family and farm, and we had—my father and his family were really from Tennessee, but my mother's family had moved from Tennessee to Phoenix, Arizona. And so we moved back and forth in between the two states and points in between.

AW:

So did you grow up in any one place?

NP:

Moved to Lubbock, I was forty five years old, this is my forty fourth permanent address.

AW:

My goodness.

NP:

Yeah I had a lot of different addresses. Primarily Tennessee I would say.

AW:

And East or West or central?

NP:

West Tennessee, Memphis to about half way—Paris, Tennessee, Humboldt, Tennessee, that's in the western part of the state.

AW:

How'd you get interested in fish?

NP:

Oh that's a long story, but I'll give it to you quickly. I was interested in fish and wildlife from the time I was a young child. And I captured everything I could capture, carried it home, I mean everything. When I was in high school, I was very involved in hunting and fishing and things like that, just as a spare time activity. And I took one of those, I think they're like twenty five cents an issue, but one of those taxidermy correspondence courses that [inaudible] and you're old enough to remember seeing them—

AW:

Yeah on the back of the comic book, right next to the "Don't let bullies kick sand in backpack."

NP:

Yeah that was it. Well it was North west I believe it was North west taxidermy studio or taxidermy something like that. So I got these courses and I was doing taxidermy work and that was just a you know a thing to get interested in you know a hobby and I'd bounded about everything you could imagine. And then I was also pretty much interested in electronics and so I had every old radio and TV and things were outdated and turned away from other people and then while in high school I took an electronic correspondence course from U.L laboratories out

of Kentucky and I took that course and then I worked while I was in high school in a TV radio repair shop and then in those days you did [inaudible] and then you did repair work on them in those times.

AW:

[inaudible]

NP:

Yeah, circuit in, a new tube, things like that, so I worked there. That was my endeavor in electronics. My father was a machinist, and so we had access to things to do with machine work, and my first car was a thirty seven ford sedan and it had a V8 in it-- a flat head V8 in it and a six horse power, and I got it and the first thing I did was change it out and I put me a big motor—85 horse-power in it and I tore the transmission out of that and I put another one in and I was into cars and hot rods and—

AW:

Did the '37 look like the '36?

NP:

No, the '37—I've had three '36's—

AW:

That's a real pretty car.

NP:

The little-- I had a three bandicoup, five bandicoup and then they made a sedan, I had one of each.

AW:

What is the difference because the '37 doesn't ring a bell with me, I remember the grill—

NP:

Well the '37 had on the side it kind of looked like the '36 on the side of the hood, had those movers on the side like that. But the '37 was a two door sedan, and in the door post right behind towards the driver and passenger set, it had turn signals that would flop up like that.

AW:

The Europeans used those for a long time.

NP:

Yeah, it would flop up like that. Turn signals out there. And the '36's the bumper went down like that, it had a dip down in it, '37's was straight across.

AW:

That's too bad 'cause the grill of the '36 was the prettiest thing, it was one of the most elegantly designed grills, I think.

NP:

They were pretty, and that [inaudible 00:11:53] on the car, it was just great. I certainly wish I had it. I had it when we got married. We got married and it was another story there but, I tore the rear end out of it drag racing with a guy, and I was in the air force and I was in Memphis, Tennessee and I had to get from there back to my base and I just—I was in Memphis and I tore my car up and I had to get some way to get back, and I called a guy up that I knew had some cars and I traded sight unseen my '36 for a '54 dodge station wagon. But it would run, and it got me from Memphis to Altus, Oklahoma.

AW:

I've made trades like that too. I'm listening and I've been thinking, before you went to college you went to the air force?

NP:

I went to college—a long story here—I went to college for one year—

AW:

Where'd you go?

NP:

Memphis state at that time, and I turned down a four year scholarship to Southwestern because in my mind it was a church school and I didn't want to go do that or whatever and it was far more liberal than the state ever was, nevertheless I went to Memphis State and I was interested in girls and partying and all that stuff and one year I was in double E pre-engineering, and I wanted to do electronics, and so I went one year and did poorly in things, so I decided, well this isn't cut out for me so I'm gonna go to trade school. So I quit after one year, then I went to William R. Moore trade school, I was a machinist and a welder and my father was a machinist, so I did that for one year. Then I had a '32 ford roadster that was a show car and everything that you could pull off of it in chrome was pulled off in chrome. I had two engines in it, one that ran it and the second one that was cut away and you could look in and see the valves and the gears and the transmission, I still have the transmission, I made a foot stool out of it, some of the parts, so I've still got parts of it, but that car had three two barrel carburetors, three deuces on it, no hood and I was driving it in Memphis one time and it started flooding out and I saw it flooding out and I pulled over, and

when I did, the gas just poured out and it ran down on the exhaust manifold and the car blew up in fire. And I ran to the trunk to raise it up and I had all these chrome things back there, I had a little canister that would hold a spare headlight, spare bulbs and some spare fuses, all chrome in a little can thing that's mounted on the back of the trunk on the wall. Had a chrome fire extinguisher and it was on a chrome clip and it would slide up and down and it had scratches on it. So I put a chrome band around it and screwed it down with the chrome screw. And then when my car caught on fire, I couldn't get my chrome screwdriver out fast enough to get the darn screw out and the damn thing burned up.

AW:

So you chromed yourself out of a '32 ford.

NP:

That's right. So at that time my life—there was no reason to live, I left and I joined the Air Force and I left home and so that was 1962. And so then I joined the Air Force and I spent fourteen months down in San Antonio and I was in tech schools down there in electronics. And so I was very much interested in electronics and I could have gone there or into mechanics, but I wanted to be in electronics so I stayed there. And I went from there after fourteen months to Altus, Oklahoma and we were putting in Atlas self-missiles which were liquid fuel missiles at that time. And when I got to Altus we had thirteen empty holes. Three years later I left we had thirteen empty holes. Altus had gone in, put in place before it was fully operational, and it was obsolete replaced by minute man, all the things were taken out and they were gone. So that was the story.

AW:

That's kind of like digging a hole and putting the dirt back in.

NP:

So I got out of the air force then and that was—I'd gotten married in '63, and had a child while we were in Altus, and then I got out and I had the G.I. Bill and so I moved back to Memphis and I worked in the television R.C.E. television manufacturing and we made ten thousand TV's a day.

AW:

Golly.

NP:

Three shifts and so they had you know a little over thirty five hundred TV's per shift. And it worked round the clock and they made ten thousand of them every day. And I worked there and my job was called a purchasing's material inspector. And so I would take a sample of things that were electronic and test them for the electronic specifications.

AW:

Yeah to make sure you're getting the right stuff.

NP:

Right, does it perform. And so they had to do everything that they're supposed to do. And if they worked we put a green tag on them, and they went through the line and you used them. If they didn't work, we put a red tag on them and then they couldn't be used. And so if you didn't have the right parts, then the plant had a choice, they shut down, but under their contract with the union they had to pay everybody a certain amount and send them home. In the years that I worked there never one time was the plant shut down, never. And I've seen them crush ten thousand TV's because the parts did not work—

AW:

But they kept the plant running.

NP:

They kept the plant running and they took the write off of crushing those TV's versus the small pennies that went into the parts and labor to make them. So it made money for them to crush. And the roll of the double E's that were there, electrical engineers, was to say this part doesn't meet specifications and can I go and do something to tweak this and make this work by redoing some other part of the circuit and that was what the double E's did. If the double E's said this would never work, shut the plant down, it was never shut down. Never. And so I became very dissatisfied what I saw double E's doing and their respect and so I no longer wanted to be in electronics. So I was going to school and I would go to school in the morning and try to get classes that were later starting, but I had to be at work at three o'clock and I would work until eleven. I'd get off at eleven and the rest of the guys would all go to the bar and drink a little beer until one o'clock when they closed, and then I'd go home, and the next morning I'd get up and go to school and do that. And so my grades weren't all that good. My marriage wasn't all that good, and it was just something I was doing to draw my G.I. Bill and I could get that money, and that money was a whole hundred and thirty five dollars a month, but that was significant at that time, so I got my hundred and thirty five a month, and at that time, tuition cost me eighty seven dollars and fifty cents a semester. When I'd started before I went into the air force it was eighty two dollars and fifty cents it had gone up five dollars in about five years and then it—that's what it was costing, and I was getting a hundred and thirty five a month to go to school. So I was just taking my money and not doing well. And then I have a friend who was working on his masters and he was married to a girl that was in my high school class so it was through her, meeting her husband, and he was doing a survey of the fish of the Wolf River, which runs through Memphis, and I went with him and I had been catching fish and frogs and snakes and critters all my life. And so I went with him and I went to help him collect fish, and I said "You mean this is

something people call a job?” “You mean you can do this and get paid?” And I was astonished and so at that point, I decided well if they can do this I can do this, so I’m gonna be one of these guys. And I had been going to school with no real direction, I knew I no longer wanted to be an engineer, I had a brother in law that was a pharmacist and he said, “go to pharmacy school and I’ll put you in business,” so I said well, I guess I can do that. So I started taking biology courses and that’s how I got linked in and I took this one trip with this guy and I said, you mean they pay you to do this? I can’t believe it. So that got me in fisheries and I just kept going to school.

AW:

Where’d you get your degrees?

NP:

I have my undergraduate and masters from Memphis State and I got my doctorate from A&M.

AW:

And how did you get out to Lubbock?

NP:

Well let me tell you about A&M first.

AW:

Sure.

NP:

Cause that’s an interesting story I think. In the summer of 1973, one other—well, two other students and I drove to thirty five different schools that summer and I started at Woods Hole and University of Massachusetts, came down the east coast and Virginia, Virginia Tech and North Carolina, Florida, Auburn and University of Tennessee, all the schools on the south and south east. We went over to Louisiana, and then finally to A&M. When I was working on my masters, I was working on fresh water fish and aquaponics and recirculation systems, so I’m just using the water over and over again and raising catfish. While there, I was employed by the U.S. fish and wildlife service, but I stayed at Memphis State. My professor Dr. Bill Simco had a grant and he employed a person that was on the Memphis State payroll, but he assigned them to work in Stuttgart, Arkansas, so these two were able to switch out and so I was paid by Stuttgart, Arkansas and stayed in Memphis and this other guy was paid and stayed over there. So that got my link to the fish and wildlife service as a graduate student. And when I wanted to go to my—work on my doctorate, I wanted a place where I could use—reuse of water, but I wanted to work with freshwater fish and saltwater fish, but I didn’t want to be limited to finned fish nor to shell fish, whatever. I wanted broader, whatever I could find. So I went to all these places and I found a place where I could work with shrimp, I could work with mussels and I could work with oysters

and I could work with something else. But I got to A&M and there was a project down on the Gulf Coast at Baytown using the heated effluent from Galveston Bay, from a power plant in Galveston Bay, and there I could work with anything I could catch. I said that's for me, and so that's what carried me to there. And then I left there and this was 1977 and I had two seemingly good job offers, one was with fish and wildlife service in Marion, Alabama, the other one was in Kuwait. In Kuwait would pay a lot more than the one I wound up taking. But I had at that point I had a three year old daughter and an eleven year old son, and my wife said well she wasn't really excited about going to Kuwait, she researched around and so she didn't want to go and if I went she wanted to stay here, and I'd be over there and I could do that for a year or whatever so, it sounded a lot better to just stay with fish and wildlife service, so that's what I did. And went there, Marion, Alabama is a very small little rural town quite different from in College Station or Memphis or any other place. So I told my wife we'd be there for two years—

AW:

Is Marion on the coast?

NP:

No, Marion is—if you think of Alabama, Montgomery was kind of in the center, seventy miles kind of straight up from that is Birmingham, and then draw a triangle and about seventy miles over here is Tuscaloosa, and Marion is south of Tuscaloosa about sixty miles. It's about sixty miles from each of these three places. Sixty to seventy miles from Tuscaloosa, Birmingham and Montgomery so it's in the central part of the state North to South, but in the kind of the western part of the state. So anyway, I would up staying there eleven years and most of the time I was not there I was some other part of the world doing whatever and after I went there, and when I was having my doctoral defense, one of my professor said "Where are you going?" And I told him "Well either Kuwait or Marion, Alabama" and he says, "Why would you go to a place that's closing?" Then I said, "What?" He said, "Marion it's on the closure list" I said, "No one told me that." So after my defense, then I started checking into it and found out, well yeah it's been listed for closure every year, but it doesn't matter cause the congress is gonna put it back in, and congress did. So the way the bureaucracy worked, you get administrative budget and it has x dollars and they-- the administrators list what they want to keep funding, and that anything that they know that congress is really supportive of, that's what they're gonna close then congress will add it back in. And congress did that year after year after year from 1963 or '65 up until I went to work for them in '77. And then in '77 I got there and I had only been there a little over a year and they transferred my boss to Leetown, West Virginia. And they left me there as a temporary in charge. We'll have somebody down here to take over and we had a staff of twenty seven people. And I was a young new Ph.D. been there a little more than one year, they were gonna have somebody down at the end of the week. Well that week went to the next week and the next week and it went on and it was about I'm thinking nine months or something like that, and finally they realized well Parker's down here and we've never done anything so I could no

serve in that capacity without having some paperwork, and compete for the job-- etcetera. And to be allowed director, which was what I was acting as you had to have Washington office experience and I didn't have Washington office experience. So they put through a temporary promotion for me after about nine months and then they left me in that job for about two years—

AW:

As a temporary?

NP:

As a temporary. But two years later then they started checking the records and said you don't have Washington office experience you've been illegally paid, you're gonna have to pay back the difference. See I got a pay raise—you're gonna pay back the difference. And I said, what?! I contacted all the guys that I knew that were lab directors and my—my peers and those that could give me guidance and they said well you can fight it by going this way and this way and whatever so I did. And it doesn't always make logical sense what bureaucracy does, it usually does not. So what they decided to do was, we will reclassify the job and you will no longer be a lab director you will be a scientific director and we're gonna change this nationwide so all the lab directors in the fish and wildlife service nationwide will reclassify as scientific directors. Scientific directors did not have to have Washington office experience. So that's how they got out of it, and I was there as lab director for how many years until I left and when I left they reclassified all the jobs as lab directors, and required Washington office experience. That's the government for you. But anyway, at that point, I had been fighting every year and you go through what they call RIF, reduction in force and my boss would come down to the lab and we had never talked about that in the office we'd go out and stand on the pond bank where no one could hear you—okay and RIF this is what we're gonna do we'll keep this person and this person and here's the way you terminate and what you're gonna do to shut it down. Every year we'd go through that exercise. And we'd be on the chopping block and congress would come and put us back in. But you had to make those plans every year. And so they kept cutting my personnel, when I went there I had twenty seven people, when I left there I had nine point seven I believe it was. They kept cutting us down. But I had fifty four man years when I had only nine point seven personnel, and the way I got my fifty four man years, I brought in people from universities, I brought in visiting scientists from abroad and I brought them into the lab and I had all these people working there that the government was paying them nothing, they were all coming there cause we had the facilities, the equipment, we had everything, but they had to bring their own support in terms of salary and things. So I had professors on sabbaticals, I had visiting scientists from India, I had them from China, I had them from Turkey, I had them from—one from Venezuela, Israel, so I had them from everywhere and then I had them from Universities everywhere. So I had fifty four man years of work but the governments only paying for nine point seven, so it made it hard for the government to really shut us down cause you could look at productivity for man hour and they didn't count fifty four, they only counted nine point seven.

So we were really doing good. So then I got a million dollar add on and so that million dollars bumped into my budget to bring me up and now I could do things we couldn't do before we had that. And so at that point, I said I fought this long enough, I'm going to leave and let a new person come in and take this million dollars and go do it, and so that's what I did. And at that point, I decided I would move to the co-op units and that's what's here at Tech.

AW:

And what is a co-op unit, what does that mean?

NP:

It's a cooperative fish and wildlife research unit.

AW:

Cooperative meaning between U.S. and—

NP:

Federal-- the University and the state. Now there had been a co-op unit. I'm gonna tell you all this and I don't know how much I want to have broadcast around because this is just the way it is.

AW:

Well you know this is available for people to listen to for scholarly research so—

NP:

Well I'm gone tell ya this story. Texas A&M had a co-op unit. I was a student at Texas A&M, but the co-op unit at Texas A&M closed in 1965 at the request of Texas A&M. The only unit that had ever been closed. And the reason it closed was because Texas, well Texas parks and wildlife did not need any input from the federal government to tell them how to do anything in their state. So with the co-op unit and federal dollars coming in and federal programs—

AW:

They were stuck with it.

NP:

There was a conflict—

AW:

Kind of the same reason we have ERCOT [Electronic Reliability Council of Texas].

NP:

Yeah. So the dissatisfaction was that as long as Texas A&M has this co-op unit here, you're not going to be able to work with Texas parks and wildlife, and there are no public lands to speak of in the state of Texas. It's all private, and so if you're gonna do anything you've gotta work with the state and the land owners and so if you had a conflict with the feds, then—

AW:

You were stuck.

NP:

You were stuck, that's right. So Texas A&M said let's close this thing down. And they did and it stayed closed until B. Pickens the wife of T. Boone Pickens at that time, and Senator Benson and B. Pickens decided we should have a co-op unit at Texas Tech. B. Pickens is the reason that this unit is here.

AW:

That's interesting, a liberal senator and a very conservative business guy's wife—

NP:

That's how it came about. And there's more to this story, I'll just tell you this because it's interesting stuff—

AW:

It sounds interesting. Why was she interested in there being a co-op program at all?

NP:

Because she very much interested in natural resources. If you've ever been up on their big ranch around Amarillo that's how many ever sections it is, and they've got all these programs and they're feeding quail and doing this and doing that and so they've got a lot of involvement in maintaining of the natural resource base and if you look at that ranch, it's not a ranch in which money flows out, it's a ranch at which money flows in. If you didn't have the oil money and things like T. Boone Pickens, that ranch wouldn't be running the way that ranch was run. So anyway, B. Pickens thought it would be helpful to have one of these, and so she started working with it to do it. And her avenue to do that was Senator Benson. So when you have a co-op unit, the federal government provides the personnel. So there were three federal employees that the federal government picked up their salaries. The federal government also provides a small operational budget. And then they provided the vehicles, and then other equipment. And so that's what the feds put into it. The University has to agree to provide the home, they have the buildings, the housing, the structure and pay the utilities and the faculty must be assigned to your graduate faculty. So they have to be approved by them to be assigned but that's where they fit. And then the state, in this case, Texas Parks and Wildlife, they must contribute dollars, and so

they put some money into the unit to bring in the expertise that resides in the university to apply to problems that are of particular interest to Texas Tech Parks and Wildlife. Now the thinking behind these co-op units and why they were established-- I mean it's great, what it does, it allows the federal government to set up an entity at a university and reach out within the university to pull in faculty and students to direct their efforts to projects that are of interest to the federal government; without having to hire those people. And then it also allows the University to have a way to bring in dollars through an existing agreement that is not competitive, just like going out and applying with anything that's announced for co-op peace. So there are some benefits on all parties, but it is a cooperative deal and it is structured in a very special way. So it was because of B. Pickens and Benson that we have this. Now Munford[00:39:52] plays a role in it, and I'm blank right now on the name of the director of Texas Parks and Wildlife at that time—

AW:

Yeah that would have been before Andy Samson—

NP:

Oh yeah it was before Andy and it was 1988—

AW:

Yeah, I don't have a clue—

NP:

It's Charles somebody I'm pretty sure, but I can't remember his last name, but he was the director. He had to write a letter to the Fish and Wildlife Service saying we want this unit in the state of Texas. Well, he was under pressure from A&M, if we're gonna have a unit, we're gonna put it at A&M. So now we've got conflict. We've got two different Universities that are requesting it; Parks and Wildlife doesn't want to get in the mix of this thing so they don't want to do anything. And it had been A&M once before and it ended up closed because of the objections of Parks and Wildlife. So now, we have to have a letter from Parks and Wildlife going to Fish and Wildlife Service and the director at that time was Lynn Greenwald I'm pretty sure, Greenwald was still the director, maybe not, I'm thinking it was. So I had to go to him and say we want this placed here and request it, and this is what we'll do to support it. Well that letter would never come, so B. Pickens and Benson started, well what's the problem, why are we not getting this done and whatever, and so they go to Munford, Munford was a chair of the Senate Corporations Committee—

AW:

State Senate?

NP:

State Senate. And he called in the director of Parks and Wildlife, and he told him he said, "You know we're having a problem, this letter is not getting up there, we can't get this unit in until you write a letter." Well the director of Parks and Wildlife said "Well we don't have a budget that we could do that, that's not in our budget, we don't have the money that we can support that." Munford, I'm told, told him, "You don't understand, until you write that letter, you don't have a budget." And low and behold the letter was written supporting to bring that unit to Texas Tech, and that's how we're here.

AW:

Well very interesting.

NP:

And Munford, this is more interesting stuff about Munford. He and Bob Baker and I and some other people are all co-authors on two scientific publications, the only two that Munford has ever been involved in but he became particularly interested in it and so they were published through the museum and Munford took a role in it before he was chancellor, he was still sitting at the Corporations Committee chair. And that's another story that we-- put together a proposal-- we being Baker and I, put together a proposal that we were gonna do some work and bring some money in and tie it to the co-op unit and then you know spread it within the University. We went up to present this and it went through arts and sciences through that dean and everything was good and it went up my side and I was over in ag and it went to my dean and it was not accepted. And the dean did this to me and said, "You will not do this," and that made me very angry I can assure you, and you will not do this. So I went back and told Baker I can't do it, my dean said I can't do it, it'd be taking money away from his college to work with art and sciences and split things, so anything that happened he wanted it to stay in that college. So Don Harrigan was president at that time, so I went to Bob Baker and told him and he went back to the dean and went back up went to Harrigan, and the next thing I knew, we were all sitting at Harrigan's office, the deans, Baker and I. And Harrigan's word was, "This will be resolved and there will be cooperation or there will be new deans." And it was resolved. So then we went back down and we had—I believe her name was Martha Brown, I'm not sure if that's her name or not, but she was kind of the Universities legislative liaison, I believe her name was Martha Brown. But I know two Martha Browns and one was at Memphis State, but I believe this lady's name was Martha Brown as well. So we had Gary Edson and Martha Brown and some other folks, a whole - you know group of us, went to Austin to go down to meet with Munford, I went in and laid out what we wanted to do, we wanted to add this money back into Texas Parks and Wildlife budget so they could use it to bring back into the co-op unit to go do these things done over to the museum and what I was doing in the lab here and mapping and things. So we got there and Munford just kicked on it like that, boy this was just a great idea-- he just got behind it and David Smith was the commissioner of public health at that time so he was in Austin—

AW:

David Smith that later became the chancellor?

NP:

Yeah. Well he became the Health Science Center head first, and then later became chancellor—

AW:

But same one?

NP:

Same David Smith. So Munford gets him on the phone and he gets the director of Parks and Wildlife on the phone and he's this is what we're gonna do, and Parks and Wildlife they didn't want that at all. So they said well if you're gonna do this, go ahead and put it directly in Tech's budget, and so they wound up-- they put it in Tech's budget. But Munford calls up David Smith and says that you know this is what we're gonna do—now what we had done, we, mostly Baker, my we is just a little bitty piece of this okay. But in Texas we collect about three hundred plus bats that test positive for rabies each year. And if you just look at records just that year after year about the same number and no one had ever looked at location, and so that's what we did—

AW:

They'd look at the number not the location of where they come from—

NP:

That's right, so we start putting them on the map, with G.I.S. type stuff, we're putting them on the map, and what you found is one year they're in one part of the state, the next year they're here, the next year over here—

AW:

Not always from the same place, not evenly distributed?

NP:

No, no evenly distributed, they're clusters.

AW:

That's really interesting.

NP:

Well it was, and Bob's a bat guy, so you've got the world's best bat mammalogist and looking at this. And they said we can't understand it. And I'm a fish guy and it just happened to be in the mapping I sure didn't understand it. But when you start talking to people and learning, well at

one time, we're trying to eradicate boll weevil's somewhere and we're spraying this whole area to control boll weevil's, well do you think we're taking any non-target species as well? Are we taking things that bats eat? And so when you start understanding more about the environment; that maybe we had a drought or we had wildfires or we had something else, the bats are not where we would—just evenly distributed, they're in certain areas of the state. Well why are they not in these other areas? So when you bring in more people and they know about the wildfires or the drought or the spraying or the whatever it is, then you can begin to see some reasoning maybe linkage of why this is happening. So we had done this piece of work and presented it and headed to Munford and it tied into public health, because that's where you send your bats to whatever-- to test positive, and so you know Munford says we need public health and this David Smith, so he put a person in his organization on the thing and those were some of the publications that Munford was part of, and this all started before he ever became chancellor.

AW:

How interesting.

NP:

And then certainly before David Smith was ever chancellor. Then later, and I don't remember what year this was, but it was kind of funny. I do some sculpturing, woodwork sculptures; and so I make longhorn cows, longhorn bulls, I was making all these little longhorn cows and I decided to make some longhorn bulls, and they were kind of anatomically correct but maybe even exaggerated a bit—

AW:

These were good bulls—

NP:

Yeah these were good bulls. And my wife says, "Oh these are horrible," and she would say, "I'm not gonna let that sit in my house," and she'd hide it in the closet when her little lady friends would come over and play bridge, and had the little cows out, they had all—all over them they liked them and [inaudible] "Well let me show you what he's got." She'd go get the bull to bring it all and they all wanted one, ALL of them wanted one. So I made a bunch of little bulls and I gave one to Munford, gave one to I guess it was Harrigan, Munford and Harrigan, Edson and Baker, and maybe another one or two. I made one of these bulls that came with each one of them, and they all had it in their office in a prominent place up there on display for a period of time.

AW:

Oh that's good.

NP:

That's how the co-op unit got here, and our tie with Munford before Munford became chancellor and we got the line item written into the budget, and it stayed there until—it was still there when I left.

AW:

And you left what year?

NP:

I left on three-three-three, March the 3rd, 2003.

AW:

I didn't realize that you had been gone for that long.

NP:

Ten years.

AW:

Yeah, I didn't realize that—

NP:

You've been here eight—

AW:

I know I just thought it was a couple of years ago. Well let's get on to—this is a good way of getting us up to speed, oh one other thing, let me get your physical address, mailing address here in town.

NP:

7805 Zoar. Z-O-A-R.

AW:

And the zip?

NP:

79424.

AW:

Z-O-A-R.

NP:

Named after a city in Israel. Close to Beersheba.

AW:

Well that's—my Israeli geography is not very good.

NP:

Well that's how it's named. Biblical kind of thing.

AW:

The reason I called you to see about doing the interview other than I thought a time or two just to get your story because I've gotten to know you through [inaudible] and I've always been interested in-- you're like me A.D.D. when it comes to ideas, you always gotta a bazillion different ideas going, and I appreciate that, that's the way I like to operate myself in case I get bored with one, there's always another one waiting to go. But I've always been interested in the variety of ideas you've got but when Daryl Merkenfeld [?] [00:52:34] sent me those two papers that you had written about the connected issues-- although a lot of people sadly would not connect them that is the energy and loss of water out here on the high plains and what that's gonna do to our agricultural economy, you know. We never did have a subsistence economy per say out here, it's always been row crop of some kind, cash, monoculture changes from whatever it was the dry land things before the second World War, irrigated afterwards and mostly cotton now and [inaudible] and a few other things, but as you and I have talked in our meetings and overall [inaudible] that's coming to a halt because our waters coming to a halt. I mean forget the fact that we're in a drought, that just makes it worse, but we've been running out of water for some time and the notion that you have on pairing, alternative energy both from wind and also wind as a way of storing the energy by splitting water up into hydrogen and oxygen and then we combining those with a particular process that lets you get that energy back again with pretty small loss relatively speaking in terms of how much energy that you took to do the electrolysis. I thought that was really interesting, but then you combine that with the notion of the hydroponics and add all those together to do in places like Lubbock where, you know, we're although our city fathers don't seem to realize how dependent we are on agriculture. I guess they think we live of sales tax and the mall. Even though there's nobody to shop there. I'm interested in the experience that you were describing to me over the phone about-- and we kind of started at the beginning cause the whole notion—and you've described some of it in this whole history of the bureaucracy of the U.S. Fish and Wildlife and then all that's gone on here in Texas and how our organizational world doesn't always mesh with the reality of the world that scientists and people with their feet on the ground are coming up to. So just describe real briefly cause I want to file a copy if it's alright with you of your papers with this interview. What occasioned your thinking on this?

NP:

Well I told you that when I started working on my masters, I worked with water use and reuse and fish production and even aquaponics at those times. So this was dating back to mid-sixties, so this was not new to me to have been involved in this thing. What has been new to me you know, my exposure to all these things like electronics and mechanics and things like that and I have a daughter that's a mechanical engineer and biomedical engineer and she's married to a mechanical engineer, his twin brother is a mechanical engineer, so a lot of engineers in the family and I started out that path myself, so these ideas have been exposed to them, it's not totally new thinking, and when you look around at what we have, well let's start putting some of these things together. And so rather than working on isolated, how do we take a waste resource in one industry, link it into a raw product in the next industry and take that and link it to the next one. And I call this concept a seed park, a sustainable environmental and economic development park where you link pieces, and when you do that, we can produce a number of goods that are lower cost than we could stand alone and produce those generating wastes that you then in turn paying someone to handle for you or to take, having environmental damage and consequences. So it seems to be the right answer is to try to link things together and where you have something that you would discard, try to find a way that you could make it positive and so that's exactly what wind and hydrogen and greenhouses have in common. So if we take wind energy—

AW:

The waste of one is the input of another.

NP:

That's right. And the rapid growth of alternative energy and especially in Texas. And there was just a recent additive of an insert in the paper in Amarillo, had the article there and they're expecting that within the next five years that you will see wind power at least double, but if it works at the rate it has for the last five years, it won't take five years, it'll be doubling more in like four years. So Amarillo is—

AW:

And they think that even in the face of three dollar and a quarter natural gas?

NP:

Right now, they still think that. So that's happening. The thing that's driving me is that we may have three dollar and a quarter natural gas, and we have other alternative sources, but those are relatively short term, and even if you look at people like T. Boon Pickens, T. Boon Pickens—

AW:

Who is proposing to change out of natural gas because his idea is your never gonna get automobiles on it, but you can get over the road semi-trucks on it and I've heard him talk a

couple of summers ago and even at what was this number six dollars or that you could double it and it was still cheaper than gasoline and so you could take a big chunk out of that market pretty fast if T. Boon Pickens has his way. And T. Boon has said you know let's look at two things, water and fossil fuels and he said, where we are, those only will have about a two hundred year life span and so we're already well beyond the hundred years in petroleum and he says even spread that out as far as we think it'll go he said even oil men say we won't have it for the next hundred years, not like we have it today. Now recent things that you've seen new releases and things like that people are saying oh we have enough natural gas, this thing is gonna be for four or five hundred years just like it is. Well, that may have—we don't know that, it may be, but it's not likely, and if it is with the rate that we're increasing CO2 in the atmosphere, then we do see that we're melting the polar ice caps and we're seeing the flooding on the east coast that we just had, and that's only going to become more severe—

AW:

Out west Calvary—

NP:

And we're looking at billions of dollars that New York is at least talking about putting in structures to try to protect Manhattan and areas from flooding and billions of dollars to try to protect it but when you look at the projected sea level rise you know, numbers go up as high as the mid-twenties to the low thirties and sea level rise at some point if we melt all this ice that we have in the arctic and the Antarctic—

AW:

At some point it's gonna be cheaper to move it.

NP:

It will be yeah, but it will get abandoned and as this gets flooded, and we rebuild and it floods and rebuild then the new building is gonna move to higher elevation and that will become less desirable property and it will fall into slums and its quality will come down because no one can continue to put capital in that area, they'll move to higher elevation. Now if we go to the west coast and look at sea levels rise there, so much of our vegetables and our food are produced right there, right down at sea level right now. And we already have problems with salt and things having to drain that area back out and that's with the low sea levels we have. As we start increasing this, it's gonna be a time that it's gonna flood over that ag land or we're gonna be building large dykes like they have in the Netherlands and find some way to try to counter it, but it appears like we're on a track to raise sea level and it's gonna have some serious influences. If we have that occurring on the coast all around us-- and we have a reliance where we are on the Ogallala, but we see that we're pulling it down from a far sustainable rate that it's gonna be dry in a very short period of time.

AW:

That's the number we've heard in [inaudible 01:02:54] county in less than ten years in terms of economic use.

NP:

That's right.

AW:

For row crop.

NP:

That's right, and I've talked to farmers and I've talked to some farmers and they say they could use my well for two weeks and I've got to turn it off and let it rest. And in that cold the depression is filled back up and they pump it again for a week or two, comes back down, just a cycle of that. But every time it recovers it's been recovering on average over the last thirty years a foot lower than it had before. But in this drought, it was two point nine feet one year and two point three or four the next year. So we're not going to have the irrigated ag and I talked to farmers about it and some told me, "We'll just go to dry land farming, that's what we were doing before" so cotton will still be here and will still be a big producer, but it's dry land. But can our economy afford the inputs in the dry land that we're now putting into ag if we're getting out such a small return, and when I look at dry land and the numbers, I don't know exactly on these numbers but it appears the numbers I've seen about half the land is irrigated, half the land is dry land. The land that's irrigated produces two thirds of the cotton, and the dry land produces about one third—

AW:

That's about right. When I was a kid growing up, the rule was, one out of five years if you made a crop on dry land you could get by, but in irrigated, it had to be one out of three, you know cause of the higher inputs and the relative. Now I know that Texas A&M's research station here is working diligently to develop-- to reengineer our cotton—

NP:

Dry land cotton.

AW:

Back to what it used to be. But beyond dry land they were talking about perennial leaving it up like the shrub that it is, so your input cost would go way down, but on the other hand our economy, how many people here make their living because they provide the inputs? Tractor manufacturers, fertilizer distributors, all those people, if you have a crop that doesn't need

tractors then they're out of jobs too. I mean you really are looking at an impact on the economy any way you go.

NP:

Well I think though that if we look at what is being done Almeria, Spain—

AW:

I saw that in your paper.

NP:

In Almeria, Spain if you think about it the Spaghetti Westerns, all the Clint Eastwood movies, "The Good, The Bad, The Ugly." "Hang Em High" and all those.

AW:

Those look like the western New Mexico doesn't it?

NP:

Or Arizona, and that's where those were shot. They were called the Spaghetti Westerns because the directors were from Italy, but it was shot in Spain. So in this area on the Mediterranean coast is a hundred and seventy seven square miles, it's roughly one fifth of Lubbock County. If you look at this from satellite view it is solid greenhouses. And the greenhouses are producing two point seven million tons of produce per year, one point five billion dollars per year and they employ tens of thousands of people. They employ people in building greenhouses, cleaning greenhouses, in providing bee's for pollination in the greenhouses and providing plants and seed and fertilizer, shipping containers and shipping, plus all the financing and managing and marketing, huge industry built there. And a portion of their water was taken from desalination of the Mediterranean Sea. Now, water in Lubbock, Texas, based on Texas A&M extension services, their work here in Plainview for picker cotton, one gallon of water will yield point one zero zero zero nine cents worth of cotton. That's three zeroes and a nine. If you have alfalfa its three zeroes and a five. So it takes something like a hundred and five thousand gallons of water to produce a hundred dollars' worth of cotton. So you do the per gallon, you get that zero zero zero nine cents. If we take that same amount of water and put it in the green house, one gallon of water in a greenhouse will yield sixty three cents worth of produce.

AW:

That's thousands of times difference.

NP:

Yes, so zero zero zero nine, so this is the thousands, that's nine ten thousandths of cent, so it's nine ten thousandths versus sixty three cents. And if we take the amount of water that we would

put into say ethanol, and this is including the corn, including the processing in the plant etcetera, it takes right at two thousand and four hundred gallons of water to give you the equivalent of one gallon of gasoline, the energy in one gallon. And it takes one point eight gallons of ethanol to have the same B.T.U.s as gasoline, but it takes two thousand ninety eight gallons is the number that I think I recall to produce one gallon of gasoline equivalent. So it makes no sense to do that. If we take that same water and we split it into hydrogen and oxygen, I go down to Lubbock Welding and get the price of hydrogen, that one gallon of water has twenty eight dollars of hydrogen in it, one gallon. Now, when we run our wind turbines up here, when the wind is blowing, we're producing wind and putting on the grid and most of the time the return for that is two to two and a half cents per kilowatt. When power is two and a cents a kilowatt, you can use that power, and split water into hydrogen and oxygen and you store the amount of hydrogen that has the equivalent of one gallon of gasoline and you produced it for one dollar's worth of electricity. So what we're now selling for two bucks a K.W, if we were to split water with it, we could be producing hydrogen that's the same energy of one gallon of gasoline for one dollar. And right now the price of gasoline, regular is three thirty, three thirty five or something like that, but we could do it for one dollar. Now even if electricity is six cents a K.W, you could do it for three dollars, and that's still cheaper than you're buying it today. So why are we putting our power into the grid and getting two cents, when we could use our power to do something else that gives us a greater return. So now people say well what are you gonna do with the hydrogen? Dr. Cliff Records [01:10:53] is at Middle Tennessee State University in Tennessee, and this spring, he completed a coast to coast trip in a gasoline engine automobile that he converted to run on hydrogen. The conversion cost was fifteen hundred dollars for him to make the conversion to switch it from gasoline to hydrogen. He drove coast to coast and ran on hydrogen that he produced in his laboratory by splitting water like we're speaking now. So if he can do it, why could a farmer in Plainview, or Lubbock County or Hale Center, why could they not take wind that they have, produce their electricity, split water, make hydrogen, convert their truck, convert their tractor, convert their automobile to run on hydrogen and service their needs in and around their farm and in their community? They're not stranded when they go out on the road because they're not on the road, they're back at home every night and they can fill up again. Now as we do this, we do two things, we start developing the technology and the education to move us from a fossil fuel based economy to a renewable energy economy, and I'm the age that I grew up on flat head fords and gasoline. And that's what drove me, and I still love them but my kids and my grandkids will only see those in museums. So internal combustion engines, I believe will begin to fade away, and they'll be replaced by electric vehicles running fuel cells and a fuel cell is a device that you could add the hydrogen, it puts the oxygen back in and it produces electricity.

AW:

Does it get the oxygen out of the air?

NP:

It gets the oxygen out of the air.

AW:

So all you have to do in that container is have the hydrogen.

NP:

That's right. So it's enough oxygen in the air to do that. And so it produces electricity. Now, there are—

AW:

And water.

NP:

And water. That's the only exhaust is water vapor. And in NREL which is National Renewable Energy Lab and they're in Fort Collins I guess, I think that's where they're located Fort Collins or Golden—

AW:

Golden.

NP:

Golden, they're in Golden. They're in Golden, Colorado and they have researched this to take wind power, put it in the hydrogen, run it back through a fuel cell and put it back on a grid to boost electricity at times that you need it. Excel, our supplier of energy in the city of Lubbock now, Excel is working with University of Minnesota and they're doing this today, they're taking wind power, splitting water, putting it into hydrogen, taking the hydrogen, go through a fuel cell and put it back on the grid at the time they need it. Now if you look at the demand for energy, it peaks from about five p.m. to about seven p.m. and at that time, if you have a wind turbine, you're putting power on, in the summer you may be getting paid twenty four, twenty five cents a K.W. for that little short two hour period. But the rest of the time it's two and a half cents.

AW:

And not only that, wind is more reliable at night than it is during the day time in most of these areas, so you're producing wind at a time that you don't get paid much for it, and grid may not even be able to take it.

NP:

When you look at wind power, people criticize it that it's too erratic, it's not a stable base, but the wind is always blowing somewhere, so when you have enough turbines spread out over

enough area, then you have some turbines that are always producing somewhere so there's a base level that can be used.

AW:

Well in fact in the United States, as the Europeans I've talked to about wind have said that the United States is best suited in the world to use wind because we have five time zones. Meaning our use is spread out across the country and the problem that we have is that we do not link our grids, you know. And so if we develop ways to get wind energy like the Tres Amigas switch that's been planned.

NP:

Looks like it's going to go?

AW:

Is it? They haven't turned any dirt.

NP:

No no, but they haven't turned any dirt, but everything I'm hearing from talking to people that are into wind is that they believe that's moving along.

AW:

Good yeah, the last time that I talked to them, there was still a lot of question about well three dollar gas makes the investors nervous. But all that said, if you can move your energy around when you need it from wind, then it makes a big difference. Plus now, doesn't Texas Tech, I know they do, they have at least one wind turbine out in Andrews county now that's desalinating water, that's what it's using its energy for right? From the aquifer that's below the Olalla[01:16:35] that has—

NP:

That's correct.

AW:

So lots of other alternative. We need to think of using that.

NP:

When we're doing electrolyzes for example, the water that goes there, must be pure water so you can't have water with minerals in it. And so, we have to have either distilled water, or we have to have rain water or something that we can use there. But when you go back to places like Almeria, Spain where they have all the greenhouse construction, part of the water that they're using is fresh water that is desalinated, going into their greenhouse structure. So we have a

certain level of rainfall that we can tap even in years of drought, there's some small amount, even in the most severe drought, but most of the time we have that about sixteen inches that we have here. And so that water can be used directly, other water that we're now putting on crops would have far greater value if you put it into an electrolyzer and use it in energy or in greenhouses as accommodation. There are a number of ways that we can produce fresh water with our solar energy here that we wouldn't even have to use a desalination in the typical sense. But we could use solar energy if we properly construct these things.

AW:

So what's the impediment for getting things like this brought to fruition?

NP:

I think the biggest impediment is lack of knowledge and vision. These are the kinds of things that someone is going to have to take ownership and go out and do. And the farmers are doing a good job at doing what they do, they know how to raise cotton, they know how to raise sorrel [01:18:39], they know how to raise whatever, their crop. They understand that, and they're comfortable raising what they raise today and so they're not wanting to risk anything or look to the future because when I've talked to them they say that's not gonna be my problem.

AW:

Well not only that but even if they thought differently aren't they trapped in the system. If you took this idea to your banker in Idalou—

NP:

Absolutely.

AW:

And if you a half million-- got three hundred thousand dollars in a cotton stripper, how do you convert that to a greenhouse, you know? I mean in some ways if you're a cotton farmer, you're a cotton farmer-- somebody's gonna have to help you get out of that.

NP:

Well, there's a model for this. And the model is in the southeast, primarily in the state of Mississippi, and before the southeast was such a fish production state, primarily catfish, it was all cotton. And you would fly over Mississippi and you'd look, you'd see this county is covered in fish ponds and this county is all cotton, and why was it spotty like that? The reason it was spotty is because, a place that there was fish farms, there were bankers that became interested, learned something about it and said "You know, we can make money here, we'll probably do better here than in cotton, I will risk it" and when they risk, they were rewarded by their farmers being successful, one farmer did it, and then the neighbor said well he did fine, he made more on his

breakers [01:20:26] than I did on my cotton. Now that banker says, well I'll do it for you. And then it was the banking community that got behind it that allowed it to develop and that's why it's patchy all over the state.

AW:

So have you had a chance to talk to a banker out here?

NP:

I have talked to a banker who is now retired, and his response was, "I'm retiring and I'm going to New York and there's some investors up there that would probably see some potential here and they may be interested." I spoke with him and he spoke to our Lubbock [inaudible] club, what he had to say I don't know, I viewed him as kind of a visionary. He was projecting things that I thought, this is the right track, I visit with him, and he was gracious enough to give us time. Bill Putzil [01:21:27] and I went in and spent an hour or so with him and then I got one of these documents back to him, and he was busy 'cause he was retiring, and I never heard another word from him, so. When I tried to get in touch with him they said, oh he's retired, he's gone, so he's not there. I don't know, it's gonna take somebody else that has the contact, and the way I think this has to be done, I think it's gonna take grass root support. And I think farmers are aware, why I talk to them, they can only run their wells for so long then have to shut it down. And if we look at—there's a farm in Iowa or Illinois, I forgot, the guy's name is Scovey [01:22:13]. But he and his sons had several thousand acres of crop land there and he said, "We can't maintain this" and so they have gone to intensive greenhouse production of various crops, primarily food crops, but primarily tomatoes and squash and things like that. And so now, they're a big time producer, they're making that transition like we're talking about needs to be made. So here's a model, here's people that have already done it. And it's not problem free, he says the biggest problem we have with this is marketing. And so we have—the cotton has a marketing mechanism that's been developed over the years, so the farmers not having to go out and pedal on his own to sell his produce, his crop. But when he moves into greenhouses, things like that, there's not somebody out there to take it, so marketing becomes a local issue and a big problem.

AW:

Especially if you're going from one kind of a crop to another, I mean—if you were already in an area where you raised truck crops, you would have the marketing, you'd just be switching your method of production.

NP:

But when you look at where we are, so many of our crops are coming from California and going to the east, so we're already half way there, so if we could produce them, we could have some advantages in some way.

AW:

Well another thing greenhouses do is address the whole issue of local production—

NP:

Yes.

AW:

‘Cause you can have a greenhouse damn near anywhere right?

NP:

Right. And what I can envision, we have programs under USDA where they make money available to help a farmer build a home. There are loan programs that come under at UFC to help a farmer build a house. And as they build that house, rather than just building just a basic box, if they also built one that was self-sufficient in energy and had a wind turbine, had an electrolyzer and it can produce it's hydrogen that they could use in their truck for their tractor or in their greenhouse, now then, when you roll the cost of those things into the capital development for the house, you're paying for it over a long term, but at financing rates that are far better than you would have if you were to try to get operational money. And so you've got capital tied up that will now deliver you from the ongoing cost of utilities and energy that you would normally be paying, so, I think you get an advantage by making that switch. And it's easier to do in new construction, build a new house and there's the stuff in it and things, it's better than fitting an old one.

AW:

As a person who lives in a sixty year old home, I'm always really ticked at people who own these green building, or green home conferences and they're all about building a brand new house and I say what about the rest of us that have—how do we retrofit a sixty year old house to make it green? And the answer is, you don't, it's too expensive.

NP:

Well, it's just very expensive to do.

AW:

I mean you're better off to give this house to someone else that doesn't care and lives at home. Well, let me ask this Nick, this is an ongoing thing, we've probably talked all we need to talk about today about it but, would you—I'm gonna try and keep in touch with you, but when something happens on this, let me know cause I'd like to continue to do some interviews and kind of keep tabs of—

NP:

What I think we need to have on this Andy is we need to have some farmers that give us their input, and I've talked to some farmers that say, "Well we know we can't continue doing—and my son can't do what I did," and whatever. But they don't see an answer, they don't think that they can do this.

AW:

I mean I hear at these wind conferences, I hear the farmers saying this is what I'm gonna use to replace water, cause this is how I'm gonna keep my place, if I can get a turbine, but getting a turbine it's not really easier than getting a greenhouse.

NP:

What I think though, we have the opportunity for, and I'm trying to visit with farmers but again, I said it's probably gotta be a grass roots. But PYCO, is a co-op of co-ops, so the gen's own PYCO. The farmers own the gen's cooperatively. SO when you look at who owns the tin wind turbines over there, at PYCO, you got a large number of farmers out here that have a little bitty tiny piece of it. If they would take the power from one wind turbine, and shunt that over to link ministries site at avenue A and 19th, and build a greenhouse there that link ministries wants to build, Texas Tech has already done some drawings, David Driscoll and his students to reuse, repurpose some of those buildings as greenhouses. That combination could become a test bed, it could be a model, and we could go to Almeria, Spain and adopt what can be adopted and adapt what needs to be adapted. And it may not be the same thing that Almeria will work in west Texas, but it's a good start. And if we could get PYCO behind it, and farmers behind it, then we could have this local test bed and we could have involvement of Texas Tech, we could have link ministries, we could—in the food desert of east Lubbock if you will, we could have food production there, we could have farmers markets tied to it, so there are a lot of things that could come out of it, and as you work through how this works and solve problems, then you finally reach a point that we've got something that is functional and it can be replicated from here, north. And so that's where I think we need to go, but we need to get there before we run out of water, and before we run out of energy, and we can't wait until the lights run out and say now what do we do? We need to start now.

AW:

Yep. That's a good note to end this. Thanks Nick.

NP:

Well I don't know if this is—

AW:

No it's been great.

[End of Recording]

