

Oklahoma Innovations Radio Show

Air Date: January 9-10, 2010

Guests: Oklahoma State Representative **Richard Morrisette** and **Paul Todd**, president of the Aromatic Cedar Association

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From the OCAST Radio Network, this is *Oklahoma Innovations*, a weekly science and technology radio magazine brought to you as a service of OCAST, the Oklahoma Center for the Advancement of Science and Technology. OCAST is the state's only agency whose sole focus is technology, its development, transfer, and commercialization. OCAST mission is to identify and fund promising research in technologies that allow Oklahoma to compete in a global market economy from our own backyard. This program features some of the state's most gifted and talented scientists, inventors, entrepreneurs, manufacturers, and business leaders who all have one common goal, developing technology-based economic growth for all Oklahomans. Now here are your hosts, Gary Owen and Steve Paris.

>> Gary: And all together now.

>> [multiple speakers] Happy New Year!

>> Gary: To all of our affiliates and our listeners in the broad area of Oklahoma. Today we're going to be talking with, we have the honor of having a law maker in our studio today.

>> Steve: We do have Gary, state representative, Richard Morrisette, who is probably one of the very few, maybe the only one, legislators in the United States who has served in two state legislatures.

>> Gary: Wow.

>> Steve: Oklahoman's.

>> Gary: No kidding.

>> Steve: Yeah, we're going to hear more about him in just a minute.

>> Gary: That's wonderful. And we're going to be talking about his initiative that involves making the eastern red cedars more productive in generating economic wealth for our state down the line.

>> Steve: Exactly. How long have we been talking about red cedar?

>> Gary: Yes we have.

>> Steve: It's been you know, it's kind of one of those weed tap trees.

>> Gary: That's right.

>> Steve: That most of us wish we didn't have, but it soaks up a lot of water, impacts pasture land. It's dangerous in fires because it has a tendency, a tendency to explode. We're going to hear all about that here in just a little bit. We also have with us Paul Todd, who's president of the Aromatic Cedar Association. So you want to make sure you stay tuned in.

>> Gary: We've got innovations for sure.

>> Steve: Great show.

>> Gary: So, the OCAST 2010 impact report came out. It's really nice and it's titled, The Time is Now. Tell us about the theme of this impact report and what it means.

>> Steve: Well of course, you know, the state of Oklahoma is undergoing a severe economic downturn, as far as receipts are concerned and those are things that happen periodically. It's part of the cycle. This one seems to be a little deeper than what we've experienced. But you know, we're trying to make the case that our investment in science and technology, it's important all the time. Now, we don't expect to have a whole you know, any more money available from the state of Oklahoma to conduct research in you know, this next year, but at some point in time that will turn around. It'll get better. We'll go through you know, an up cycle and at that point in time we would like to have, have our state position to invest in the science and technology that's close to commercialization. The kind of technology that's going to create jobs and bring wealth to our state. And that's the case we're trying to make with the impact report. Probably, if you took one single thing out of this impact report Gary, it's the fact that over the last 22 years, for every dollar the state of Oklahoma has invested in our programs, for applied research and health research, small business innovation research, we have gotten a return of \$19.91.

>> Gary: Wow.

>> Steve: And so. Now, that money doesn't come back in the form of money going into the state treasury, it doesn't come back in the form of money coming to maybe any one individual or anything, but what it does, there's that much more money that's put together with the funds that we provide, that funds R and D in the state of Oklahoma. And you know, even though the downturn is very severe, some of us are wondering how much more severe it would be had we not diversified.

>> Gary: That's right.

>> Steve: At least to the extent that we have and of course obviously, you never do that enough.

>> Gary: Right.

>> Steve: You look back and wish we had diversified more. But you know, you take it as it comes and I think there's a lot of companies, in both Tulsa, Oklahoma City, Lawton and other places in the state, where we have technology based businesses.

>> Gary: That's right.

>> Steve: That were not there 20 years ago so.

>> Gary: That's right. It has created job wealth. We've grew, look at the talent that we've recruited to our state in science and technology, that we would normally not have looked at us. And so I commend OCAST and what a great history here that funded 2198 Oklahoma research projects, leveraged more than 3.5 billion. That's just awesome. Outstanding.

>> Steve: Yeah and my thanks to Representative Morrissette and other members of the legislature.

>> Gary: Right.

>> Steve: For making that possible.

>> Gary: You bet.

>> Representative Morrisette: You're quite welcome.

>> Gary: So what else is going on at OCAST?

>> Steve: Well, you know.

>> Gary: Starting out the new year.

>> Steve: Yes. We're getting ready for the legislative session which begins in February. We're asked to come forward and explain what we did with the money they've given us in the past and which is a part of our accountability process.

>> Gary: Sure.

>> Steve: And so, you know, this year again, as I mentioned earlier, it's going to be a lean year. For all of Oklahoma.

>> Gary: Yes, yes it is.

>> Steve: And you know, there's no one you can really blame for that. I mean, people like to point fingers. You can't do that. This is, this is a worldwide and very specifically a nationwide issue and Oklahoma is being impacted right now and we will work through it. And how we'll do it? I don't know. That's going to be left up to Representative Morrisette and his colleagues, but we will work through it. But there's a point out there somewhere where the state of Oklahoma will come back out and we.

>> Gary: It may be a slow recovery though sure.

>> Steve: It may be.

>> Gary: But you know, but in saying that as well, Oklahoma is doing much better than many states.

>> Steve: Well.

>> Gary: In the nation right now. You know.

>> Steve: Yeah, we've had, we've kind of reached the low point right now. We were doing a lot better a little earlier, but it seems like lately, the news hasn't been so good as far as tax receipts go.

>> Gary: That's right.

>> Steve: But again, that's cyclical and it will change and it's going to be up to some good thinking people to make that happen.

>> Gary: In national and global science and technology news this week, a lot of interesting stories. One that really jumped out for me this week, remains of the first airplane ever taken to Antarctica in 1912, has been found by Australian researchers. The Mawson's Huts Foundation has been searching for the plane for three summers, before stumbling upon metal pieces of it on New Year's day, of all days. The biggest news of the day is that they found the air tractor or at least part of it. And Australian, to give you a little history on this, Australian polar explorer and geologist, Douglas Mawson, led two expeditions to Antarctica in early 1900's, the first one bringing along aside a single propeller Vickers plane. You should, you know what a Vicker's plane is.

>> Steve: Of course. I used to fly them all the time.

>> Gary: The wings of the plane, built in 1911, have been damaged in a crash before the expedition, but Mawson hoped to use it as kind of a motorized sled. Well 1911 and 1914, Australian Antarctic expedition used the plane to tow gear onto the ice in preparation for their sledging journeys. But the plane's engine could not withstand the extreme temperatures and was eventually abandoned. NASA's new planet hunting telescope, Kepler, has found two mystery objects that are too hot to be planets and too small to be stars. How hot? 26,000 degrees. That's hot enough to melt lead or iron. The two heavenly bodies, each circling it's own star. And according to scientists, the objects are thousand's of degrees hotter than the stars they circle. So there you go. Can't live there, that's the way it goes. Google has a new vision for a mobile phone and how it should be made and sold and will likely shake up the mobile phone industry. They have a new phone that's quite interesting. It's called the Nexus One. And according to what we've been told, it will sell for about \$400 to \$600. But now here's the hook. They're saying that they're designing this phone to be used with any carrier you choose. Now T mobile has agreed to provide a subsidy for Nexus One. It works on it's wireless network. But Google is hoping that it will be big enough to make a splash and persuade other major US carriers to handle the phone. So there you go. Another new phone toy for you folks to look out for. For the past thirty years, scientists and technicians have been grappling with making robots walk on two legs. Because we as humans obviously do it effortlessly. Well now, several teams across the country are refining the first generation of robots that are close to walking like people. That includes ability to recover from stumbles, resist shoves and navigate rough terrain. It walks, PETMAN design by Boston Dynamics in Waltham, Massachusetts. The two legged robot saunters with uncanny realism. The android has no upper body, just steel and plastic legs, attached to a system of power cables. But it walks on it's own, using the same heel to toe motion that humans use. When pushed from the side, PETMAN side steps to recover it's balance. The robot even wears shoes. I can't believe that. Well. I've got one other story here I want to share with you and this has to do with our health. Ten years ago the government set some lofty health goals for the nation to reach by the year 2010. So how did we do? Well according to medical experts, not so hot. There are more obese Americans than a decade ago, not fewer. We eat more salt and fat, not less. And more of us have high blood pressure. More of our children have untreated tooth decay. But the nation has made at least some progress on many other goals. Vaccination rates have improved. Most workplace injuries are down. And death rates from stroke, cancer and heart disease, are all dropping. So you've got to take the bad news with the good news.

>> Steve: There you go.

>> Gary: Now Steve has some really interesting innovations in history this week.

>> Steve: I do Gary, thank you. Doctor William Grant of Davenport, Iowa; performed the first successful appendectomy on January 4, 1885. It almost sounds like you should say you were there.

>> Gary: You were there.

>> Steve: On the same date in 1950, RCA Victor announced that it would manufacture long playing records. This news came two years after the Columbia Records debuted the album. And it was the Federal Communications Commission, the FCC, that got it's first, very first demonstration of FM radio on January 5, 1940. The new medium, free of interferent static and noise in thunderstorms, was developed by Major E. H. Armstrong. And the first FM transmitter was put in operation in 1941.

>> Gary: Wow.

>> Steve: It was January 6, 1838 the telegraph was demonstrated for the first time in public at the Speedwell Ironworks in Morristown, New Jersey. The person demonstrating the new invention, the telegraph's inventor was of course, Samuel Morse.

>> Gary: Beep, beep, beep-beep, beep.

>> Steve: There you go. Doctor Norman Shumway, performed the first heart transplant, on an adult patient in the US, on January 6, 1968. And that was at Stanford University.

>> Gary: It was.

>> Steve: Yeah. I think OU beat them the other day didn't they?

>> Gary: I think so.

>> Steve: All right? Shumway's historic first heart transplant came four weeks after the first such operation in the world by Doctor Christian Barnard, in South Africa. Barnard used techniques developed by Shumway at Stanford. And it was on January 7, 1894, when William Kennedy and Laurie Dixon, received a patent for motion picture film. His demonstration included a 47 frame film. Went by very quickly. The demo ran about two seconds and showed comedian Fred Ott, sneezing. And it was on the same date in 1927, thirty one calls were made on this, the first day of Trans-Atlantic telephone service. Services began between New York and London. The calls cost \$75 each for 5 minutes.

>> Gary: Ouch! Wow!

>> Steve: Whoa! And it was on January 9, 1941, the first demonstration of small screen color television was given by Columbia Broadcasting System. The TV failed miserably.

>> Gary: Yep.

>> Steve: Since RCA had pretty much wrapped up the patent process on colored TV at the time. And those Gary, are just a few of the innovations in history for the month of January.

>> Gary: And I didn't get to do my, you had a story there on the album. I didn't get to do my, I had it all planned out.

>> Steve: I'm sorry.

>> Gary: And I forgot to do my album.

>> Steve: You didn't tell me. You didn't tell me.

>> Gary: So there you are.

>> Steve: I'm sorry.

>> Gary: I'm sorry too. Well, one other story here. Those of you that suffer from tinnitus, guess what? They now say there's some music therapy that may help reduce noise levels in people suffering from this ear ringing disorder and that according to German scientists. They're saying there are certain musical treatments that actually help people strip, strip out those sound frequencies and what they're saying is that a lot of the problems of the tinnitus is actually being suffered by young people.

>> Ya think? Turn down the MP3's.

>> Gary: OK, we'll let you go. All right, we're going to take a little break. When we come back we're going to be talking about eastern red cedar problems in Oklahoma. When we return on *Oklahoma Innovations*.

[Music]

>> As you drive across Oklahoma, you can see thousand's of gas wells sprinkled throughout the countryside. Many of these wells don't produce enough natural gas to justify pipelines, but without this access, thousand's of well sites are abandoned. With the support of the Oklahoma Center for Advancement in Science and Technology, one company is creating portable device, transported on a flatbed truck, to process natural gas at well sites. This technology optimizes the amount of gas that can be captured and releases no by-products into the atmosphere. This idea provides new opportunities for small oil and gas producers while bringing us one step closer to energy independence. Supporting innovation. That's what OCAST is all about. OCAST is looking for small business owners serious about investigating new products, services and processes. For more information call OCAST toll free at 866-265-2215 or visit their website at OCAST.OK.gov. Investing in research and development, it pumps new life into Oklahoma's economy.

>> You're listening to *Oklahoma Innovations* with Gary Owen and Steve Paris, on the OCAST radio network.

[Music]

>> Gary: So you're driving along the highway and you see these red cedar trees and you think gee, nice landscape. If you're not a native of Oklahoma, some people might think that. But others go, you know, these can be a real menace to agriculture land and they suck up a lot of water. They're hazardous because of potential fires and the damage that those fires can cause. Property loss, all kinds of things. However, we have some people in the studio today that are going to say you know, why don't we take this menace and do something positive with it. And that's what we're going to talk about today.

>> Steve: Yes we are, but we need to introduce our guests first and.

>> Gary: Turn your microphone on. There you go.

>> Steve: And what I'd like to do is, I'm going to go with Paul first. Paul.

>> Gary: Paul Todd.

>> Steve: Yeah. Tell us a little bit about Aromatic Cedar Association and how you came to be involved in the project we're going to be discussing today.

>> Paul: Well thank you. Back in 1985, I got approached by a guy named Tim Cannon and Doctor Steve Anderson, from OSU and they were talking about forming an association. So I, they talked me into becoming a part of that and subsequently I did and a few years after that, they put me in as president. It's one of those things you volunteer to help out and end up being. So nonetheless, I've been involved in it the last 15 years and try to do the best we can to bring some notoriety to this subject.

>> Steve: Yeah and you know, in just a few seconds, tell us what the Aromatic Cedar Association is.

>> Paul: Well thank you very much Steve. What we try to do is promote the utilization of this natural resource. We see it as a natural resource and we want it utilized as opposed to the wholesale destruction thereof.

>> Steve: Yeah. And right now the general treatment for red cedar is let's burn it, let's cut it down, let's get rid of it and we're way behind on that because it's outgrowing us isn't it.

>> Paul: Well unfortunately, we're burning tons and tons of it on a daily basis.

>> Steve: Right.

>> Paul: And that seems like a terrible waste of our natural resources.

>> Steve: There you go. Now we'd like to introduce again, Representative Richard Morrisette, District 92, which is south Oklahoma City. And I, when I and I know Representative Morrisette know where he represents and I thought you know, I bet there's not a whole lot of red cedar down there in south Oklahoma, probably some but not a great amount in south Oklahoma City.

>> Representative Morrisette: Well, there's actually more than you'd think.

>> Steve: Is that right?

>> Representative Morrisette: And it's, it's a growing problem. You know what, we really got, well go ahead, you were going to say something else.

>> Steve: Well it's all right, I was going to ask you. We're going to introduce you a little bit.

>> Representative Morrisette: OK.

>> Steve: And then, because I'm sure a lot of people know who you are but you're a member and I think this is up-to-date, judiciary, transportation, tax and the revenue committees.

>> Representative Morrisette: Yes.

>> Steve: And you have a dual bachelor of art's degrees in economics and political science from the University of Tulsa.

>> Representative Morrisette: No, University of New Hampshire is my undergraduate.

>> Steve: OK.

>> Representative Morrisette: I went to law school at Tulsa.

>> Steve: OK. And you have you're a juris doctor, from the University of Tulsa College of Law and you have the distinction of being, having been a member, currently a member of the legislature in Oklahoma and formerly a member of the New Hampshire general court and the New Hampshire House of Representatives.

>> Gary: Wow.

>> Steve: How did you do that?

>> Representative Morrisette: Well, in New Hampshire, it's interesting, if you're a political person like I am, being in New Hampshire is like being, if you're a baseball fan it's like being in Cooperstown, New York.

>> Oh, OK.

>> Representative Morrisette: Because we have the first nation, presidential primary four years. I go back as 1968, when Eugene McCarthy threatened President Linden Johnson in the snows of March in the New Hampshire house, running around stuffing envelopes and going jumping snow banks. You know, they needed a kid to go put stuff in doors and you know, let's get the kid to do it. And so then I served, I got elected when I was in college. And what's interesting about the New Hampshire General Court is, there are 400 members of the lower house, but there are only 24 senators.

>> Oh.

>> All right.

>> Representative Morrisette: The King of England, back in 1680, decried that the people needed representation, but he wanted to make sure that the landowners were in control of things.

>> Oh yeah.

>> Representative Morrisette: So that's how the senate got started.

>> Steve: OK, so it kind of follows along a little bit.

>> Representative Morrisette: A little bit. But anyway, I ended up in Oklahoma because of law school. The University of Tulsa gave me a great opportunity. You know you grew up on the other side of the tracks.

>> Steve: I see.

>> Representative Morrisette: And they gave me a great opportunity and here I am.

>> Steve: And here you are and you're representing District 92. Now, the next question is, how did you get involved with red cedar? You had an interim study right?

>> Representative Morrisette: Well, I had an interim study with it. It's very ironic. Oh and this is really how it started. Twenty years ago Paul, I was, believe it or not, I was up in Guthrie, playing a round of golf at Cedar Valley Golf Club, in Guthrie. Appropriate name right?

>> Steve: Sure.

>> Paul: It's a nice course.

>> Steve: It is.

>> Representative Morrisette: Of course I'm a terrible golfer, but what I noticed is these what looked like you know, the pine trees, I said I don't know what they were. But I was being told up there that if we don't do something within twenty years, they would just take over the whole golf course. Well anyway, I drive down to Duncan, last summer and it was just stuck in my mind. Then I was in Okeene recently and went down by the Cimmaron River with a friend and there was a forest of red cedars.

>> Steve: Right.

>> Representative Morrisette: So I, I mean literally, a forest. That used to be flat river land, bottom land, was literally covered with cedar trees like the old pine forest used to be. Anyway, one thing led to another, I submitted a study and here we are.

>> Steve: Here we are. We're talking about red cedar. And you're approaching it somewhat differently instead of just destroying the stuff.

>> Representative Morrisette: Correct.

>> Steve: You're trying to find a way to make some profit out of it.

>> Representative Morrisette: And here's an example. What I mean. And everything was done with good intention. We have, like Paul had mentioned, they had been burning you know, the Oklahoma prescribed fire counsel doing a good job trying to, remember that the interim study Paul, that they had a controlled burn in Slaughterville, but it got out of control and they had to close I-35 for three hours.

>> Steve: Oh wow.

>> Representative Morrisette: So, it just stuck in my mind here that this is a harvest, we could harvest this as a crop. And Paul got involved and some other people and next thing you know we are working on what we call the Eastern Red Cedar Initiative, which is where we're headed.

>> Steve: Very good. Well we all know the story. Those of us who've been involved in agriculture in the past in the state of Oklahoma, the story of eastern red cedar. Now it can become very pervasive on crop land and we've been, we've been funding studies for some years on how to deal with it. And most of the problems usually end up with, we don't know how to do that. It's just too big a problem.

>> Representative Morrisette: One other thing before Paul can respond to that. What really got my interest was last spring's fire in Midwest City. That fire, was really produced by the eastern, if you've ever seen a 30 foot red cedar, Paul could probably talk more about this than I can, it's like a bomb. It's like a fire bomb. And it's just miraculous that no loss of life occurred last spring in Midwest City.

>> Steve: Is it because of the oil in the trees?

>> Representative Morrisette: Yes.

>> Steve: So it's like a fuel.

>> Yes it is. And if harvested, we find ways to harvest it, that oil can become beneficial.

>> Steve: Well actually, isn't it true that nearly or all 100% of the tree can be used in some application? Isn't that right?

>> Paul: That's correct. We've got several members of our association that are grinding the whole tree to make mulch and that's an excellent example of a whole tree utilization. They do the bark, limbs, needles, trunk, everything. It's an excellent application.

>> Steve: So would you, I guess extract the oil out of it before you?

>> Paul: In that application we do not extract oil first. We just simply grind the whole tree and use it in a mulch application.

>> Steve: I see.

>> Paul: There is currently nobody in the state, manufacturing or producing cedar oil, however there are multitude of people attempting to get into that business.

>> Steve: Paul Todd with Aromatic Cedar Association and State Representative Richard Morrisette. We're talking about the eastern red cedars and some benefits we may be able to take advantage of in Oklahoma. More to come on *Oklahoma Innovations*.

>> There's more to learn on *Oklahoma Innovations* with Gary Owen and Steve Paris, on the OCAST radio network.

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>> Gary: Thank you for joining us on this week's edition of *Oklahoma Innovations*. Gary Owen and Steve Paris in the studio and our guests this week, State Representative Richard Morrisette and Paul Todd, who is president of the Aromatic Cedar Association. We're talking about the eastern red cedar, which takes over nearly 300,000 acres of Oklahoma land each year and a mature tree, get this, can soak up as much as 30 gallons of water a day. That according to an interim study. And Oklahoma State University has estimated the economic losses to Oklahoma by 2013, if the problem goes untreated, it's \$447 million, which includes \$147 million lost due to catastrophic wild fires, \$205 million in cattle forage lost, \$107 million in lease hunting lost, \$17 million in recreation lost and \$11 million in water yield lost. That's, that's quite a statement.

>> Steve: Yes it is and when you talk about 300,000 acres a year, that computes to 700 acres per day, that's invaded by red cedar, eastern red cedar. And what we've kind of laid out the issue here, we want to talk some more about that, but you gentlemen have come up with an approach and you're putting together a team that is going to be investigating this, figuring out the best way for Oklahoma to go.

>> Gary: And you've got some town meetings coming up.

>> Steve: We'll talk about those town meetings and everybody who can to attend those.

>> Representative Morrisette: One of the things that I've discovered out at the capitol is that when it's time to hear from the public, the capitol is not the best place for people. With time constraints, room restraints, whatever. So basically I thought if we had a small committee, ad hawk committee. We're going to go on the road for four regional meetings, starting next Tuesday, January 12 th, beginning in Clinton, from 6:30 to 8:30 at Frisco Center, North Exhibit Hall, where we'll have a beginning, we will begin a short film about the eastern red cedar, we'll have a panel and most importantly we want to take questions and comments from the public. From stakeholders. People that are involved. Now we know this, we hope to have a large crowd because we, Paul was there at our first meeting at the capitol and just with a brief announcement, we had over 30 people crammed in this one little room.

>> Steve: Oh yeah. It's a big issue.

>> Representative Morrisette: It is a big issue and Paul of course had a large contingent of folks there. So people have asked, what's Morrisette up to, what's he's, what's in it for him, what's underneath the rug, you know, what's he doing? This is a straight up deal folks. This is a problem. There is a solution. Now we need to come. This is not a political issue. This is not democrats and republicans. Like you see at the capitol. This is Oklahoma issues. And I invite everybody to come to these meetings.

>> Steve: Yeah and you have some people who I think are scheduled to attend, who will be making presentations possibly?

>> Representative Morrisette: Right. We've got people from perspective industry. People from the oils, that want to secrete the oils. We have folks from industry. We have Tom Loy, from.

>> Metafund?

>> Representative Morrisette: Metafund. He's going to be there and he has a very interesting idea, a very fascinating idea how people can get involved. We have lots of people coming.

>> Gary: Very good.

>> Steve: Where are the other meetings at?

>> Representative Morrisette: If I might just real briefly.

>> Steve: Yeah.

>> Paul: Yeah.

>> Representative Morrisette: The 12th in Clinton, January 19th in Stillwater. I believe we're still working on this. We're trying to get the Meridian Technology Center there, which is a great facility off of highway 51. Woodward on the 26th and we wrap it up in Chickasha on February the 2nd.

>> Steve: And most of these.

>> Representative Morrisette: 6:30 to 8:30 by the way.

>> Steve: OK, most of these are where most of the red cedar grows. Of course now the red cedar is all over Oklahoma.

>> Representative Morrisette: Yes.

>> Steve: But you're in the heavy concentrations over in western Oklahoma.

>> Representative Morrisette: Absolutely and that's why we keep scheduling in those areas.

>> Steve: Very good. You mentioned oil and there's a value to that oil. I guess, I guess Paul, you would be the person to address that.

>> Paul: Yes sir.

>> Steve: Talk to me about cedar oil and what it's value is.

>> Paul: Well cedar oil sells, it's one of those rare commodities that sells by the weight, not volume. It sells for roughly \$7.50 a pound.

>> Wow.

>> Paul: Which gives it a lot of value. It is on the federal list of essential oils and it's widely used in soaps, shampoos, perfumes and as well as the medical industry. And it's a highly sought after commodity.

>> Interesting.

>> Steve: Did I hear somewhere that we're importing cedar oil from China?

>> That's right.

>> Steve: Did I hear that?

>> Paul: There are two plants in China that do produce a given amount of cedar oil. It's not the same quality or type of oil that we have here in Oklahoma. We have juniperus virginiana [assumed spelling] oil, which is a different species than what China has. They have an ash juniper it's a little different grade or type of oil. Our oil here is the more sought after quality or grade, that we have here.

>> Steve: Now is it true that when refined aromatic oil fetches from \$50 to \$250 per gallon, on the open market?

>> Paul: Well figure 8.3 pounds per gallon times \$7.50, you get pretty close to that.

>> Steve: Pretty close. Yeah.

>> Very good. You know, when we use cedar oil, and it's used in perfume isn't it?

>> Paul: It is. It acts as a carrying agent for all the high end perfumes.

>> Yeah and what other uses might there be?

>> Paul: Well, if you look on the back of any pet shampoo, nearly, nearly every pet shampoo has a degree of cedar oil in it and it's a wonderful treatment because it repels fleas, ticks and flies.

>> Steve: That's right. There you go. Which is what it does in nature for the tree doesn't it?

>> Paul: It does.

>> Steve: Not necessarily fleas, ticks and flies, but other things.

>> Paul: And it has a neutral pH balance that you could put that oil on yourself and go out into the woods and not be infected with ticks or fleas or mosquitoes

>> Representative Morrisette: You know, recently at the capitol, we had a company that's done business here in Oklahoma, have tried to anyway. We're going to work out the kinks from California. And they're doing business with people overseas, primarily China, who we just spoke about, reimporting cedar oil from them. So this company.

>> Steve: Turn those tables huh?

>> Representative Morrisette: China has a basic problem with wood. They don't have any wood in China and there is a demand for wood products, cedar, in China. As everybody knows, China is the next booming, massive economy of the world.

>> Sure.

>> Representative Morrisette: Along with India. And there is some kinks we need to work out and the devil is in the details. So that's where we're going with this and persistence is the word of the day. We are going to be persistent.

>> Steve: Very good. We've talked earlier and we just barely touched on it, about fires and things of that. What cedar trees do that are harmful to us here in Oklahoma. And we talked about how cedar oil can explode in the tree and causes a huge fire and all those kinds of things. Do we have any idea just how damaging that is to the state of Oklahoma? I mean.

>> Representative Morrisette: Paul, if you don't mind. There are some statistics out that are staggering.

>> Steve: Staggering.

>> Representative Morrisette: For example, more than half of Oklahoma's land, all of Oklahoma's land is covered with at least fifty red cedar trees per acre, in Oklahoma.

>> Steve: Wow. Really?

>> Representative Morrisette: This is an increase of 400% since 50 years ago. Without human intervention, we have evasive species with animals and wildlife. The agricultural departments have been, ever since we've even started discussing this, hunters and sportsmen have been talking to me about how there's been a decrease in wildlife in those areas. We are losing an estimated \$218 million a year because of this evasive species. We've got loss of lands, agricultural capabilities, etcetera, etcetera. And like you said earlier, if we don't do anything now, by 2013, it'll be over \$400 million a year. So this is an evasive, this is a situation that we can work on now before it becomes a crisis. Unfortunately at the capitol, what I've discovered, legislation reacts to crisis. And then sometimes we overreact.

>> Yeah.

>> Representative Morrisette: Now is the time to take a hard look at this and invest in our future and those stakeholders, the landowners, the people that want these removed, the companies like the mulch company in Stillwater, there's an opportunity here we need to take.

>> There you go. Let me just point this out. At OCAST, we funded several red cedar projects, over the years.

>> Yes.

>> One of which is underway right now I believe, it involves looking at the North Canadian River, which becomes the Oklahoma River in Oklahoma City, but it has a lot of cedar trees in

between here and Lake Canton, I believe they're looking at ways that they can maybe impact red cedar so they don't take as much water out of that system.

>> Representative Morrissette: Absolutely and as Paul knows, those cedars gravitate towards water. Towards those river systems, lakes and they are sucking up between 30 and 50 gallons a day, per tree. Yes, exactly. And scientists are thinking that that might have an impact on how much water gets to Oklahoma City.

>> Steve: Absolutely and so on your research, have you evaluated the cost of extracting these trees and how that process works on a mass scale?

>> Paul: Well there's a given number of people out in the field. There's probably at least a dozen crews per day, out in there in the field, cutting down cedar trees and unfortunately, most of them push them up into piles and burn them and most of the time mister farmer or the landowner, is charged approximately \$65 per hour, per man out there in the field. So it is costing a significant amount of money for the removal thereof. There is a program called EQUIP that is, that cost is partially offset by some federal subsidies.

>> Steve: Real quick question here. Will these town hall meetings be on your website? The schedules of when.

>> Paul: We can make sure they're there.

>> Steve: OK and if you want to learn more, I want to give this website out right now, it's OKRedCedar.org, www.OKRedCedar.org and there's information there I would assume about a lot of this information we're talking about on the radio show.

>> That's right.

>> Steve: So those of you that are listening to this program, now remember where you are in the state of Oklahoma and listening to the show, check that out, OKRedCedar.org and Paul says they will definitely put up the calendar when these town hall meetings are coming to particular areas of the state. We've got to take a break. We'll be back with more on *Oklahoma Innovations*.

[Music]

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[Music]

>> Gary: Gary Owen and Steve Paris. You're listening to *Oklahoma Innovations*. Oklahoma Science Radio Magazine. And we're visiting with a couple of interesting gentlemen. First of all,

Paul Todd, who's president of the Aromatic Cedar Association. I want to give their website once again, OKRedCedar.org. Don't put .com, put .org or you won't find it. Also State Representative Richard Morrisette. And what we're doing here folks is basically educating you about the cost of red cedars in our state. Eastern red cedars have really caused a lot of damage as you've heard over the news and we're giving you statistics here. But there's an initiative that Representative Morrisette is taken upon, to try to make red cedar more profitable to Oklahoma. Instead of costing us, we should take a look at what that trees has in benefits to our state in oils and woods and all kinds of benefits that really could generate more economic development for us Steve.

>> Steve: And there are other aspects of this Gary. For instance, Doctor Shapiro, who's been on this show many times, Shapiro, has looked at this as a way to treat diseases that happen in Africa like schistosomiasis. Representative Morrisette, tell us about that.

>> Representative Morrisette: Well Doctor Shapiro from Norman and the University of Oklahoma, I think he's connected with OU, anyway, has found a novel use for the cedar oil. It working through John Hopkins University, to eradicate the liver fluke which causes schistosomiasis, I think that's how you pronounce that, the number two killer behind malaria in tropical climates. When combined with another ingredient sprayed on infested waters, the cedar oil kills the liver fluke parasite. So now we have worldwide applications of the red cedar.

>> Steve: Exactly.

>> Representative Morrisette: And that's where we're headed. We've got to get that plant up and going in Normand

>> Steve: Exactly. Figure out the value.

>> Gary: You wonder why mother nature put this tree on our earth, here you go. It was meant to use on all these. I mean, think of the applications.

>> Paul: There's probably a good reason to have mosquitoes, but we haven't figured that out yet. But at any rate.

>> Steve: Good point. As you go through the process of developing legislation to deal with this issue, you've got several aspects that you're, that are looking. Give us a rundown on what you hope to accomplish and some of the ideas you have.

>> Representative Morrisette: Well, renewable fuel standards, I think Paul's going to talk about that here in a second, is that one of our ideas is to set a goal and I'm not naive about this, so please I've been in politics long enough not to be naive, believe me. Set a goal, we're going to try to set a goal of 2% of energy produced in that state is bio energy, with a goal of reaching 5% bio energy. This is a doable situation. We know that with a cedar tree, 90% of it is what is called scrag cedar, which represents about 11 million acres in Oklahoma.

>> Steve: Wow.

>> Representative Morrisette: Basically and the other 10% of the trees of course are prime to be used for other purposes like cedar chests and things like that. There's been decap programs for USDA, I can have a long list here. We're talking about tax credits for not only the companies that are trying to produce products, but also a \$500 tax credit for landowners that either can give their trees or find a way to get that removal. Now, I understand that getting those trees off the land is very difficult. Paul mentioned it earlier in his comments. But there is an innovator, young man has innovated a saw, I think in Stillwater, he uses a Bobcat of some device, where it

basically it's a horizontal saw and cuts it at the base and it's very effective piece, you ought to see it. It's just amazing piece of equipment. What we have here are innovation ideas from people that want to make money.

>> Steve: That's right.

>> Gary: There you go.

>> Steve: And that's what we're trying to fund here in Oklahoma.

>> Representative Morrissette: Absolutely.

>> Steve: Creating more and more of that. You talk about you know, the red cedar and it's value and what you're trying to do to help you know. What hits me is here we have an urban lawmaker, trying to get legislation passed to help rural Oklahoma.

>> Representative Morrissette: Well you know, it's, I'm, what I hope to do out at the capitol, whether I'm rural or urban, is that we need to find solutions for all of Oklahoma.

>> Steve: There you go.

>> Representative Morrissette: And this rural, urban divide, really you know, is really kind of you know, it shouldn't exist but it does.

>> Steve: Exactly.

>> Representative Morrissette: But we have problems in south Oklahoma City.

>> Steve: Sure.

>> Representative Morrissette: With the red cedar and that fire in Midwest City was just devastating. So it's just, it doesn't matter who you vote for, you get innovative individuals that think outside the box and try to and again, again I stress this, persistence is the key to success at legislation in the capitol. Persistence.

>> Gary: And you mentioned earlier, for people who are interested in this subject, you know, this is an opportunity, this is the year for them to become proactive on this. What do you recommend they do?

>> Representative Morrissette: Well, again, let's start with their legislators OK. Everybody has a state legislator and a state senator. I would find out who they are. They're all good people. Every single, every one of those folks that I serve with in the house and senate, regardless of political party, are good people and they're there to help Oklahoma. Contact them. Have them contact me. Have them contact Paul. Come to these meetings. And because I know that in the crunch of legislation, sometimes things get you know, get stuck in the last few weeks, but if we have a large number of legislators that are interested, we can develop legislation that will be successful.

>> Gary: There you go.

>> Paul: And develop some coalitions to make things work.

>> Representative Morrissette: Some coalitions and I've heard from members, urban members, rural and they all seem to love this. Let's get behind it and amazing you know and again, this may be a long term project. We may not get where we want to get this first session, but next session 2011 and 2012, Paul if we are persistent with your association and the folks of Oklahoma, we can get this done.

>> This is exciting to hear about this. This is one of those things that as you mentioned, crosses party lines.

>> Representative Morrissette: Absolutely.

>> Steve: Now Paul, you were going to talk about, about fuel. Some of the issues that involve bio fuels.

>> Paul: Well thank you. We've got an interesting study. Our association is funding a real interesting study, being conducted at OSU as we speak. We want to know how much BTU content there is in the state of Oklahoma. We have seen the preliminary numbers, understand they are preliminary, but already the numbers are reading in the trillions, with a T, of BTU's that are available and they're constantly growing. And so I'm not satisfied why we should be importing billions of tons of coal from Wyoming or wherever coal comes from, we should ought to be using our own natural resource that's growing right here, which would stimulate an enormous amount of jobs in our local economies.

>> Steve: There you go. Another approach to resolving an issue.

>> Paul: It is.

>> Steve: And getting a benefit out of it. Gentlemen, we're getting down close to the end of our show today, but let's look down the road. Let's look five, ten years down the road now. I know you know, we're not clairvoyant, we don't, can't do that with any perfection here. But let's kind of estimate if you will from your vantage point, where do you see this red cedar issue, five, ten years down the road? I'm going to ask both of you, either one of you those, ask both of you that question.

>> Paul: I see it as a cash crop the same as wheat or soy beans or peanuts that we have in the state, it's going to be a cash crop within five years, I'm seeing.

>> Steve: Within five years.

>> Gary: Wow.

>> Steve: That's very quick.

>> Paul: That is. I'm seeing it as being a major crop item in the state of Oklahoma.

>> Steve: Representative Morrissette.

>> Representative Morrissette: A few years ago they had a technology initiative, nano technology was something that no one really considered. They got that passed. There was an article yesterday in the Journal Record.

>> Steve: Jim Mason.

>> Representative Morrissette: That's right, correct. This is where we're going. The eastern red cedar initiative and I'm just going to read it quickly. To support viable solutions to the eastern red cedar infestation, while providing economic benefit to the state of Oklahoma. One of the things we're going to do is we're going to get one of those plants upgoing with the oil, manufacturing oils and we're looking at rural Oklahoma to have a public, private partnership in several small areas in rural Oklahoma, where municipalities can invest into these plants. They're doing it in Kansas, Wyoming and Colorado and several different areas. We have examples that

have proven it's been done before in the past. So I suspect we're going to create jobs. These trees will no longer be looked at as a menace, they'll be looked at as a cash crop.

>> Steve: Outstanding.

>> Gary: And what a change.

>> Representative Morrisette: Absolutely.

>> Gary: A change in perspective.

>> Representative Morrisette: You mentioned earlier about why God you know, put those trees here.

>> Right.

>> Representative Morrisette: There's the answer right there.

>> Steve: There you go. Exactly.

>> Representative Morrisette: They are a source of solution for us.

>> Steve: What's the average growth time of a tree? I mean in height.

>> Paul: Oh it grows very fast. As much as eighteen inches to as much or twenty inches a year. And they, not just grow fast, but to grow lots of them. They're very prolific.

>> Gary: I have a little bit of perspective on that based on some information provided by your offices. And one of your colleagues, State Representative Wallace Collins recalls and he was a small child, he took a red cedar, small enough to fit in a Styrofoam cup and planted it by his house and over the years the tree grew to 25 feet, sprouted out two other large red cedars, which is typical of a red cedar. The tree started destroying his house's foundation and later he had to have it removed. He then tried taking it to a local company, a company called All Cedar, and so they could be used to help make helpful products and he found out that that company was getting it's red cedar trees from of all places, Alabama. And you know, that struck something in his mind and according to him he says, we need to take this product at value like the grape and wine industry has in Oklahoma and make this an abundant supply.

>> Representative Morrisette: We are importing Cypress mulch from Florida. The Cypress tree is an endangered tree in Florida and yet we are importing Cypress mulch. This is ridiculous. Cedar mulch, we can use this tree from tip to root, 100% and we're going to do it.

>> Gary: Don't forget, January 12 th, the first town hall meeting on this issue, in Clinton at the Frisco Center. On the 19th they'll be in Stillwater at the Meridian Technology Center. When are you going to be there, do you recall?

>> Paul: In Stillwater, on the 26 th, Woodward on. I'm sorry.

>> Gary: Nineteenth in Stillwater.

>> Paul: Yeah, all right.

>> Gary: Meridian Technology Center. You're going to be in Woodward on the 26th.

>> Paul: Twenty sixth and Chickasha on the 2nd. Right. Four of them.

>> Gary: Right.

>> Paul: Please come. We want lots of people there. It would be your chance and I mean this, every one that has an interest, we'll have questions and answers and a great panel.

>> Gary: And for more information once again, Paul Todd, you guys will put up on the website the schedule at OKRedCedar.org. That's OKRedCedar.org. Gentlemen, you've been a wealth of information here and Steve and I, this has been great.

>> Steve: Well we love the red cedar story.

>> Gary: Yes.

>> Steve: Would just like to see a solution.

>> Gary: And we hope to have you back on a future show and see how this is, get the results of the meetings and find out where we're going in the next few years maybe.

>> Representative Morrissette: Please come to the meetings. Follow us.

>> Steve: Very good.

>> Gary: All right, have a good week. We'll see you next time on *Oklahoma Innovations*.

[Music]

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