

Getting Baked: Can Legalizing Pot Help Fight Climate Change?

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Greg Dalton: From the Commonwealth Club of California this is Climate One, a conversation about America's energy, economy and environment. I'm Greg Dalton. Today on the show we're traveling to California's Emerald Triangle. The largest marijuana producing region in the world, it's located along the Northern California coast near the border with Oregon. They're a booming economy that's built on the marijuana trade. The great marijuana economy has surged in the region since California voters approved medical marijuana 20 years ago. On the ballot this November, California will vote on whether or not to go one step further and legalize pot as Colorado, Oregon and Washington have done.

Why is Climate One talking about weed? Because the country's \$3.5 billion cannabis industry has one of the biggest appetites for energy. Growing buds consumes 1% of all electricity in the United States according to one estimate; it also takes a lot of water. Over the next hour we'll explore the carbon benefits of taking marijuana from the shadows and bringing it into the legal economy. We will also discuss other aspects of marijuana cultivation and use: human health, criminal justice and others. Joining our live audience at the Commonwealth Club in San Francisco we're pleased to have with us three guests with contrasting views on legalizing cannabis. Scott Greacen is Executive Director of Friends of the Eel Creek, an environmental group in the Emerald Triangle. Michael Sutton is former president of the California Fish and Game Commission. He actively supports the California initiative to legalize marijuana. And Roger Morgan is Executive Director of the Coalition for a Drug-Free California. He opposes legalization. Please welcome them to Climate One.

[Applause]

Roger Morgan, I'd like to begin with you. Tell us the story about your stepson and stepdaughter and how they got involved with drugs.

Roger Morgan: Both got involved at age 12 and 14 in Coronado where I live; got involved with marijuana and then graduated to meth. So I lived with addiction for basically 20 years before the

marriage failed. When you live with addiction in your family and see the devastation to a human being firsthand, it's a compelling fight in my opinion. And mind you, that was 35 years ago when they began; the potency of the drug at that time was like 1% to 2%. Today in smoke form it averages about 20%, 25% and as hash oil or wax it goes normally 60% to 80%, as high as 96%. So the impact on the human body and brain is dramatically different than it even was then. But after all these years, my son seems to have recovered owing to a treatment program in Hawaii, which must be really good after all the money I spent trying to get him clean. But my daughter is 50, she was a beautiful girl at 14, I won't describe what she looks like now. But she lives in a camper on the back of a pickup truck.

She had every God-given talent in the world. So I believe honestly that if we don't roll back what exists today, I think we're destroying our youth and our environment. And if we don't put a stop to it, I don't know that either one has a future.

Greg Dalton: And how do you come to the conclusion that marijuana was the cause, rather than a symptom of some other kind of pain in their life, or temptation that sort of thing that you really think marijuana is the villain rather than something that they turned to because there was other things in their life?

Roger Morgan: Well no, I think there were other things in their life. Divorce always has an impact. There was alcoholism in the family. I think they both had a genetic predisposition to it. The problem is we didn't know what hit us at that point, and lot of kids are in that same category today. If you don't prevent the problem it's a whole different problem later on. Once they begin you're not talking to a coherent person any longer you can't have a rational discussion about this. So what we really need to do what's been missing in the war on drugs is we have not focused on prevention. It's a kind of a three-legged stool. Supply, rehabilitation and prevention and it won't stand on two legs.

Greg Dalton: Scott Greacen, the supply of that is very much, you come from that region. So tell us sort of the state and the scope of the economy, the marijuana economy right now up in the Emerald Triangle.

Scott Greacen: Well, it's a boomtown, Greg. I work for a group as you said called Friends of the Eel River. Our watershed is not heavily populated, put it that way, like most of the far northwest coast of California. We've got a lot fewer people, lot of forests and rivers. That's how most of us in the state sees us.

But as you mentioned, since 1996 when we passed a ballot measure legalizing basically making it quasi-legal for people to grow medical marijuana we've seen a really substantial change in what was already at that point, a very large industry. Even in the 90s we were producing \$1 billion worth of weed in northwest California, before Prop 215.

Greg Dalton: Which was medical marijuana, right.

Scott Greacen: And since then, things have changed dramatically. And my focus concerns have really been drawn to the impacts on our watershed and on our fish. And I've come to see that in the last four years of an extreme drought the combination of extreme drought and water diversions for pot farms and the impacts of development driven by the profits that can be realized in this incredibly lucrative industry, are really pushing our watersheds over their carrying capacity, and so that's our big focus. And as we look at that with basically the number of operations increasing, basically doubling every three years and basically expanding to fill the space available as we legalize production increasingly, it really looks like we're going to keep producing pot until, you know, there's nowhere to sell it really. And there's lots of places to sell it apparently.

Greg Dalton: So tell about the water issues. Do people just drill – steal water, drill wells. They obviously poach on state lands and parklands.

Scott Greacen: All of the above. And, you know, it really helps when you're talking about how this industry is changing and how it's likely to change under full legalization or even the partial legalization that we're looking at if we go California wide.

To understand how it's built now and how it has evolved. So there's a part of the industry that's what we call trespass grows. That's operations that are happening on public lands where there's national forests or state parks or even, you know, the watershed lands here in the Bay Area. There are also grows happening on private lands and that's most of what I'm talking about in the Emerald Triangle for our concerns. It's not so much the trespass grows. It's all of the grows that are happening as I said quasi-legally on private land. And increasingly, some of those are going to be actually legal. They're going to have permits; they're going to be following the basic water law. And with the trespass grows those guys, you know, they're never going to get permits they're completely illegal. What they do to our watercourses is unbelievable at times. They'll damn up an entire stream and mix fertilizers in the stream so the impacts can be completely catastrophic. All the water gone and what's going down is poisoned.

Greg Dalton: So Scott Greacen, then what's the case for legalization. How much is legalization, then we'll get to Michael Sutton here. Is legalization going to address these problems?

Scott Greacen: Sort of. And as I was saying, we have a system of water rights regulation in California that works for big Ag sort of. It says you can have so many thousands of acre-feet but when you look at lots and lots of little people on a creek it's a system that doesn't really work. So as we move to legalization, we're requiring people to get permits, we're requiring to get permits from the county from the Department of Fish and Wildlife from the Department of Water Resources. And the thinking I think is basically sound on the part of the assembly saying we're going to make people follow the law; that will make their operations lower impact. Well, lower impact yes, but given that the system we have is so loose and so inadequate, just making people get those permits isn't going to wind up protecting the fish that I care about in our creeks. Because it's not going to keep the dirt out and most importantly it's not going to keep the people who aren't signing up for permits from going ahead and taking the water and putting the dirt in.

And right now it's running about 10% of the existing operations look like they're going to line up and come in and get a permit eventually. And it's really hard to say that a system that only regulates 10% of an existing industry is actually going to bring it into a kind of environmental benignness.

Greg Dalton: Michael Sutton. That means that the initiative you support isn't gonna do that much. It's only gonna address 10% of an industry. The good guys will get up and say, yeah, I'll be regulated, but the cartels and the people operating the underground economy are not gonna sign up for that and say, yeah, please tax me.

Michael Sutton: Well Greg, you know, we hear a lot about the social issues surrounding legalization of marijuana. What we don't hear a lot about in the popular media and so forth are the enormous environmental consequences of this industry. This is the largest cash crop in California, including rice, almonds, all the other crops that we grow in the state. Agriculture is very large in California as you know but marijuana tops them all. Uses 3% of the state's electricity, enormous amount of water, mostly as Scott pointed out earlier, illegally. I want to read you the stated purpose of the ballot measure, the Adult Use of Marijuana Act because I think it's important to recognize what this new law would seek to do. It says "To take non-medical marijuana production and sales out of the hands of the illegal market and bring them under a regulatory structure that prevents access

by minors and protects public safety, public health and the environment.” That's what the ballot measure is intended to do. The reason I agreed to be one of the two proponents of the ballot measure is my concern for what this industry is doing to our environment in California. We have a lot to be proud of in the state. One of the most diverse, the largest and most beautiful states in the nation. I have traveled to every county in California and enjoyed the national parks, the state parks, our public lands.

And yet this industry is having an enormous detrimental effect on our ecology, our public lands as Scott alluded to part of the problem. But it goes way beyond what we've talked about so far. It's an ecological disaster because illegal growers are cutting down forests and wetlands. They're applying pesticides illegally, they're stealing water, they're poaching the wildlife to eat when they're in the field. I got to know this because when I was on the Fish and Game Commission our game wardens especially where Scott lives in the North Coast were being distracted constantly from their day jobs by having to pull up marijuana plants. The last officer involved shooting by California wildlife officer was an illegal marijuana grow operation.

So these are serious problems and that doesn't even begin to touch on the issues of energy use and climate that again Scott alluded to. The bottom line for me Greg is legalization is no panacea. It's not going to turn this industry into a green industry overnight. But it has the potential to bring the environmental impact and climate footprint of this industry way down and it's up to us to realize that potential. And we've seen that happen in some other states.

Greg Dalton: Roger Morgan, how about that, you know, the idea that you may clearly oppose the legalization, but if it's going to be here it ought to be regulated and it could reduce the environmental harm that the industry is doing?

Roger Morgan: I think number one, it's impossible to regulate it. Already, we have 50,000 illegal cultivation sites in California and by admission of our own state legislators we supply 60% of the marijuana the entire U.S. market. Okay, so aside from whatever legalities the state seems to think they have, the problem we've got is marijuana is still an illicit very harmful drug. And if we have to make money on the backs of our citizens, we're no better than the cartels.

Obviously there's money in it, but the impact is not only to the natural resources because I'm very sensitive about that but because I'm involved in drug prevention and working with cities and counties, 83% of whom, incidentally, had banned dispensaries or cultivation sites. But the impact on communities were in their terms, thugs are moving in, growing marijuana; the stench from the cultivation is so bad, they can't open their windows at night. If they complain about it they get their windows shot out. So there's a huge health problem. We know today that things we didn't know in '96, like the human brain is permanently damaged by marijuana for anybody under age 25. The younger they are, the worse it is. So by doing anything it would proliferate the cultivation or use of marijuana is inherently bad. And I think we need to renew our vows to America if you will.

Greg Dalton: Scott Greacen, will the industry expand if it's legalized, what do people up there in the Emerald Triangle think about legalization? Will it then even lead to more production and our people, you know, how do people feel about the legalization up in the northern counties?

Scott Greacen: Well historically, I think opinions been divided in the North Coast. And back when Prop 215 actually passed the Medical Marijuana Act the ballot measure. A significant part of our sort of pot growing heartland in southern Humboldt County actually voted against that measure and there was a thought that people didn't want to legalize because it would threaten their profits.

I think that the general consensus has run very strongly in favor of legalization on the north coast

for quite a while. I'm not sure that the entrepreneurs who are directly involved in the largest growing operations would necessarily share that feeling. I think a lot of them are operating on a very short timeframe and they see, you know, this year and next year as their sort of planning horizon and that something that I think is important to keep in mind as we think about regulating these guys is what are the kind of pressures they're facing. But the answer to the question of how much and how large this things going to keep growing is very, very hard to pin down. Right now, all the indications are that the pot industry on the north coast will continue to expand as long as there is land available, water available, electricity available. And to be fair when we talk about water it's pretty easy for people on a relatively small scale to fix their water problems. And we should really say that and a lot of people have. Basically what you have to do is store water from winter rains and use that in the summer. It's a Mediterranean climate, we get lots and lots of water in the winter, we don't get any in the summer. But if you have a small enough operation it's pretty easy to store the water and have a very low impact situation, whether it's for your homestead or for your tomato plant or for your pot cart.

Having said all that, though right now it looks like we are poised to continue to boom on the north coast and I think a lot of that is because of the way that the rest of California has responded to the passage of the Medical Marijuana Act last year.

And basically what we've seen is a lot of state, lot of the counties and cities saying "No, we don't want this" they're following Roger's lead and saying this is a bad thing. Humboldt and some of the other counties on the north coast are saying, well this is the cornerstone of our economy; let's legalize it and start to regulate it. And that I think is probably the right move for all of us but if we're the only people doing it, then we get all the burden. And we don't have the central valley coming in and saying we can do this more efficiently with lower impact as we probably should.

Greg Dalton: There's a case, Michael Sutton, Desert Hot Springs where I read a story in the Los Angeles Times about a guy who bought 5 acres of land, some land for his towing company and someone came along and offered him five times what he paid for it six months ago because there's a kind of, they've, the municipality that has legalized cultivation. And so what do you expect to happen in terms of if the measure that you support passes; will there be a movement of the industry down to the Central Valley, et cetera? And will there be, you know, Desert Hot Springs is kind of a little mini pot factory.

Michael Sutton: Well it's entirely possible that the industry will change dramatically when legalization is approved. This is really no different than any other form of agriculture as Scott has suggested. And it needs to be regulated as other methods of farming are regulated. There's enormous potential to increase the efficiency of the growing operations. Some estimates, suggested the farming could become 75% more efficient even if it's only done indoors, to say nothing of taking outside. Taking cultivation outside results in almost zero emissions compared to indoor cultivation. And it may be that the industry changes and moves elsewhere. It doesn't have to occur on the north coast.

One of the things that regardless of how you feel about the initiative, one of the things we have to recognize is that California stands to gain hundreds of millions of dollars in new tax revenue from this initiative. I spoke earlier today with a friend of mine who's a state senator in Washington State, and I asked him how much is Washington going to realize in terms of tax revenue this year from this industry that's fairly newly legalized in Washington. And he made a couple of phone calls to staff and he came back and he said, "It's \$170 million this year in Washington State alone, projected to grow to \$400 million in that state within a couple of years." That's the tip of the iceberg compared to California because as you know the industry is much larger here. 20% of that tax revenue will go to the environment, will go to clean up illegal grow operations, will go to restore wetlands, restore

some of the areas that Scott works on. And that's money we desperately need for the environment. 60% of the tax revenue, hundreds of millions of dollars potentially, will go to children and youth programs and so for the kinds of things that Roger works on. So this is in many respects a revenue bonanza for the state of California.

Greg Dalton: Colorado has legalized marijuana. The city of Boulder has required hundred percent clean, renewable energy for some of their growers. What else can be done to this new industry if it's brought into the legal economy in terms of making it things you can only do, you kind of get one shot at that because they only come in in the legal door one time. And once they're in, they have lobbyists and they don't like regulations, but-

Michael Sutton: This is the one of the things that they, the Blue Ribbon Task Force chaired by Lieutenant Governor Gavin Newsom looked at. The ballot measure would implement the recommendations of that Blue Ribbon Task Force that was made up of distinguished Californians from all walks of life in a sense the reason that I think many organizations such as the NAACP and medical organizations are supporting the ballot measure.

But the state isn't the last word on this. As Scott I think alluded to earlier, municipalities and counties and cities and towns get to regulate this industry as well. So for example when Colorado, in your example Colorado legalized marijuana for non-medical use; the county of Boulder stepped in and said okay, but we're going to require an additional make additional requirements on the industry in our county to make sure they're 100% renewable energy-based. And they offset all of their carbon footprint; if they depend on propane or gasoline or any of the fossil fuels they have to offset that 100%. And I would expect California counties to follow suit.

Greg Dalton: Roger Morgan, you think it's bad for government to have a profit motive to tax this thing what you see as a social ill, even if it goes to good things such as cleaning up the environment and educating children. Isn't that a good thing, this tax based, better than untaxed?

Roger Morgan: You have as with any business you have to look at income and expense, okay. There's been no discussion about the social cost. With alcohol and tobacco, the social costs are 10 times more than tax revenues. It's no different than marijuana. I take issue also with the idea that this is just like any other agricultural crop. We don't grow any other crops that basically poison people.

But if you will look back at some of the studies on the economics of this in California, there's a great study called Shoveling Up that was done by a class at Columbia University.

In 2005, 19-1/2% of California budget was absorbed by substance abuse. \$19.9 billion, \$38,000 was spent on prevention, all the rest shoveling up the damage. And that's what you're going to see today because there's been no federal or state enforcement of these laws. It's fallen on local communities and we deal with law enforcement all over the state and the sheriffs who are overwhelmed now. If this was legalized - and incidentally the medical marijuana program doesn't go away. We still have 18-year-old kids who can buy marijuana for any purported illness. So we would have both programs going and there's absolutely not enough money in the tax scheme to pay for the resources to even try to deregulate this. And if we have to collect money in taxes to teach our kids not to use this product we're growing I think it's insanity.

Greg Dalton: Michael Sutton, you have a young daughter who's not quite a teenager. At what point would you feel okay with her smoking a joint?

Michael Sutton: My job as a parent as I see it is to teach my children judgment so that they can

make these calls on their own. My job is not to substitute my judgment for theirs but to teach them judgment to make those judgment calls on their own. And I'm confident that when my kids grow up, they will grow up in a situation in an environment where this industry is just as regulated as tobacco and alcohol, and so forth. Which may not be perfect, but at least it's better than having all of the downsides of the illegal industry and none of the tax revenue associated with that huge agricultural crop.

Greg Dalton: If you're just joining us, we're talking about legalization of marijuana on the climate and energy impacts at Climate One. I'm Greg Dalton. And my guests are Roger Morgan, Executive Director, the Coalition for Drug-Free California. We just heard from Michael Sutton, former president of the California Fish and Game Commission. And Scott Greacen, is Executive Director of Friends of the Eel Creek, an environmental group up in the Emerald Triangle.

Michael Sutton, you mentioned tobacco regulation. There was a paper, that was published as part of a Gavin Newsom's Blue Ribbon Commission. Stanton Glantz is a warrior in the tobacco wars and he warned about big tobacco coming into the marijuana industry and doing what they do, which is promoting their product and making great profit. So are you concerned; you just mentioned, you know, regulation that the big tobacco companies could come into the marijuana industry, it becomes legal and profitable and should we be concerned about that?

Michael Sutton: Absolutely. In fact, as I said earlier legalization does not mean that this industry turns green or becomes a good thing overnight. It doesn't happen automatically. What it does mean and what is in the ballot measure is that the industry for the first time in more than 100 years, is subject to some of the strongest environmental laws in the nation. California can be proud of what we've achieved in terms of regulating environmental damage from all kinds of farming and other industries. Many industries don't want to locate in California because they think our environmental laws are too strong. But we're proud of that and I was proud to be a part of that when I was on the Fish and Game Commission. But it really bothered me that all of our wildlife officers were distracted from their day jobs by having to go patrol the woods for illegal marijuana operations. It made no sense at all. It was a waste of our government resources. Much better to get a huge industry like this that's causing all this environmental damage out of the shadows, out of the woods, into the light, so that we can regulate it and subject it to the full range of our environmental laws.

Greg Dalton: I'd like to go to our lightning round. And we ask each of you a simple yes or no question. Short answer question starting with Michael Sutton. Yes or no, consuming marijuana can cancel the carbon benefits of a person's green lifestyle?

Michael Sutton: Sure. It's absolutely, absolutely true. Our challenge with legalization is to make sure that we take that issue on front and center. And that we require this industry to become more efficient and to actually have a negative carbon footprint if that's possible.

Greg Dalton: Next for Roger Morgan, alcohol damages more lives in America than marijuana?

Roger Morgan: Disagree.

Greg Dalton: Michael Sutton, Roger Morgan overstates the negative health impacts of marijuana use?

Michael Sutton: I don't know. My specialty is not the social aspects of this particular issue or debate. All I know is that it's a no-brainer to legalize this industry from an environmental perspective.

Greg Dalton: Roger Morgan, America's war on drugs has been a failure. Yes or no?

Roger Morgan: I don't think you can say it's been a failure. A lot of people say proliferation is a failed policy. I think it's a failure of leadership. And the example I would give you is when Ronald Reagan went into office, 1978 until 1992. Because there was a parent movement and people were begging for information as to why marijuana was adversely impacting their kids. They cut marijuana use by 50% and stayed at that same level until Bill Clinton came into office.

Greg Dalton: That ends our lightning round. It wasn't really a yes or no questions but let's give them a round, let's thank them for doing that.

[Applause]

[CLIMATE ONE MINUTE]

Announcer: And now, here's a Climate One Minute.

Whether or not you support the legalization of marijuana, there is one compelling argument for bringing pot farms out of the shadows: water. Peter Gleick of the Pacific Institute keeps a close eye on California's water usage. While the drought persists, he says, we need to know where all of our water is going - and what it's growing.

Peter Gleick: *Any water use ought to be monitored, measured and managed. If we're moving toward an economy - a legal economy where marijuana's a big part of our agricultural sector...then we had better include it in understanding where that water is coming from and what the consequences of its use are.*

It's been a big problem. The illegal marijuana piece of this has been a big problem for water use in the northern part of the state and for water quality and for ecosystem flows.

Announcer: That's Peter Gleick, President of the Pacific Institute. He spoke recently at Climate One about California's mega-drought.

Now, back to Greg Dalton and his guests at The Commonwealth Club.

[END CLIMATE ONE MINUTE]

Greg Dalton: We're talking about marijuana and climate at Climate One with Roger Morgan, from the Coalition for Drug-Free California. Michael Sutton, former President of the California Fish and Game Commission and Scott Greacen, Executive Director of Friends of the Eel Creek, Eel River. I'm Greg Dalton. Sorry about that, didn't mean to demote your river to a creek.

So I'd like to ask you Scott Greacen about the grow houses on your block and your relationship with them and also the difference between indoor and outdoor grows because I understand there's a price difference.

Scott Greacen: Yeah, well to start with we should talk about indoor growing. And Michael talked briefly about legalization in Colorado. And one of the important things to understand about the way that we've legalized and regulated the pot industry in Colorado is that they decided for safety and security reasons basically, to require that marijuana in Colorado be grown indoors. Now in California best estimate is roughly a third of what we grow is grown indoors. And a really important part of that picture is that anybody can do it, and most everybody is. And you can do it with a small operation in your closet, in your spare bedroom, in your garage or in an entire house. And there are

a number of reasons that people would want to do that, you know, it's an easy way to make money is the big thing. But the reason that they wanted to grow indoors is you can control the environment of the plant a great deal better. You can produce a crop that is more valuable. So today on the open market you're going to get more dollars per pound for indoor product than you're going to get for outdoor.

And you're going to be able to produce it with greater rapidity. So you're gonna have three or four or five crops in a year. So you're gonna have pot to sell in the spring when people who are growing outdoors only have it for sale in the fall. So there are a lot of reasons that people who don't have the money for a parcel of land are going to want to grow indoors. Having said all that, it became such a pressure on the city of Arcata's housing stock that my town decided that we would put a surcharge on the use of electricity over and above I think the number is four times the average family's household use. So in Arcata if you use more than that amount of electricity which means you're either blowing glass or you're growing pot or you're doing something else that needs a lot of electricity, you're going to pay that surcharge. The effect of that has been to encourage people to move their indoor grows out of Arcata. Some of them have but on my one block that I live on I count four grow houses.

Now people live in most of those; there's only one that I'm pretty sure nobody lives in and it's just plants. But I mean that's after we put the surcharge on. And honestly I think you're going to have a really hard time finding a residential community in California that doesn't have some indoor growing happening in it. And I firmly agree with Michael that the way forward here is to legalize and to regulate this industry, but we need to be realistic about the fact that the industry we already have includes an awful lot of these indoor operations. And yes, we could move to lower their energy footprint quite substantially. One of the big pieces of that for us on the north coast is getting people to stop using generators to produce the electricity they need to run lights in the hills.

Greg Dalton: Dirty diesel generators.

Scott Greacen: Yeah, and it's, you know, it's 50% more fuel use just to run it off a generator. But this is the reality, is that a substantial portion of the industry is indoor grows because that's what sells.

Greg Dalton: And do we know how much is going to move to the Central Valley already? There's a San Francisco Chronicle story about kind of a land rush going on in anticipation of this passing, Michael Sutton could this could go to the Central Valley where there's already lots of water stress.

Michael Sutton: I'll share a secret with you Greg; it's already in the Central Valley. I'll tell you a story, one of my good friends who owns a 4000 acre rice farm in the Central Valley up by Chico, he loves waterfowl and wetlands and so he took 1000 acres of his rice farm and restored it; a painstaking labor of love, restoration of the most beautiful wetlands and it's duck heaven in the Sacramento Valley. Well that became very attractive to illegal marijuana growers because they have couple of things they need: concealment and water. And so this friend of mine had to hire a private security force just to keep the illegal grow operations out of his restored wetland. And he said to me, you know, my labor of love, restoration, no good deed goes unpunished because these guys are in there they have sixty-day crops, they're in and out before we can even find them and they're stealing water, using pesticides, ruining my wetlands.

So it's already in the Central Valley. And I agree with Scott, one of the big benefits of legalization will be to get it out of the shadows. Get it out of these illegal places and get it regulated as any other form of agriculture. If you – from a climate and energy perspective, you don't want marijuana grown indoors because that creates a huge carbon footprint for the product. You want the product grown

out-of-doors which has almost zero emissions compared to an indoor grow operation.

And in California as Scott alluded to before we can do that. But you also want the industry to use state-of-the-art farming techniques to improve its efficiency, to be subject to California's environmental laws and to be taxed so that we can clean up the mess left by the illegal industry in the woods.

Greg Dalton: Scott Greacen, one prospect here, there's going to be barcodes so that people can kind of have a trace the chain of custody. So there's something like free, fair trade marijuana, the people can know where it's grown or how it's grown?

Scott Greacen: Well the most important thing about this concept which is coming into effect in 2018 under the Medical Marijuana Law just passed last year in California, is that indeed growers will be required to trace their crop from seed to sale, is that regulators will then be able to assure the public that those legal grows are not diverting pot into the black market. That's the most important piece of that and that's to satisfy the Department of Justice. What that does in addition to allowing third-party certifiers to say this person is growing in a way that's even better than the law requires and you should give them a premium for being so good to the fish, is it also allows the consumer to have some level of assurance that what they're getting doesn't have pesticides in it especially. And this is actually a much bigger deal than I think most consumers understand. There's an excellent series in the Oregonian newspaper about a year ago. And Oregon has legalized not just the adult use of marijuana but also the -

Scott Greacen: It's the edibles and the hash oils and the other sort of derived products. And the point about that is that even though Oregon requires that the growers be certified and that those growers were already certified as not using pesticides. When the Oregonian went and did a double-blind test on what's commercially available, they found very high levels of many pesticides in those concentrated products. And so it's very important for us to be able to trace those chains of custody back to the grower and say no, you can't do that, you can't use that because it's showing up in the product.

Having said all that we need to go back to a really important point that Michael has made which is that we are going to be able to derive a lot of revenue that we need to protect the environment from taxes on the product. And that's true and it's important but its intention was some very important other values. One of them is that we are not going to get people to stop growing pot on our public lands, those trespass grows, or growing pot in their spare bedrooms until the price drops to a point where they're not getting a high return on the black market. And what we see in Colorado and Washington is that we're trying to get taxes off of this crop. So we're actually creating a sort of additional cost for the grower above and beyond what they're already carrying just to grow the crop.

The long and the short of it is we have a real tension in our public policy between wanting to keep the prices up where they are now and realize the tax benefits of legalization and actually wanting to really lower the market value of the stuff so that people stop having an incentive to do stupid stuff.

Greg Dalton: Michael Sutton, the tax the measure that you support on the November ballot in California would tax marijuana at a 15% sales tax plus, there's like a per ounce tax on there. So is that a good public policy when government wants to keep the price hike as they're making money but really the social good would be to have the price low like Scott Greacen just said.

Michael Sutton: To tell you the truth Greg, I don't think the government is going to have any clue or any control over the price. The market has shown us in other states and frankly, we don't have a lot of experience to go on because legalization in any state is relatively recent. We have medical

marijuana as Scott said before California was the first state to develop legalized medical marijuana 20 years ago. But legalization on a broad scale is a relatively recent phenomenon, so there's a lot of papers in the published literature, scientific literature about the impacts of this industry and the illegal aspects of the industry; very few papers yet on the benefits of legalization. So a lot of what we're talking about today is speculative. But what we do know suggests that the government will have no control and very little influence on the price. This is such a large commodity, such a big piece of our agricultural industry in California and elsewhere that I don't think the government is going to have much control. But it will reap enormous benefits from the legal industry that will go toward a number of social interests, law enforcement, environmental mediation, restoration are just a couple of examples.

Greg Dalton: One other unanticipated outcome in Denver; there is a spike in energy use where pot has been legalized. And half of the growth in electricity in Denver was attributed by the Denver Post recently to marijuana. So you're pitching legalizing marijuana because it will be more efficient in terms of energy and water at times of drought and climate change. In Colorado, they're seeing growth in energy at a time when the state is trying to reduce their carbon footprint to meet the president's power plan that commits, you know, that makes good on the Paris Climate Agreement.

Michael Sutton: You know Greg, I think Scott provided part of the answer to that question because he pointed out earlier that Colorado requires legal grow operations to be indoors. That is not going to be the case in California. We have a much more benign and agricultural friendly climate in California than is in Colorado. I would expect an increasing number of operations to be conducted outdoors when the industry is legalized.

As I said before though, this legalization does not mean the industry automatically becomes green or sustainable. Our job is to make sure that's the case. We haven't done a very good job with other forms of agriculture in making sure that it has a relatively low carbon footprint or that water is used efficiently. I live on the edge of the Salinas Valley and believe me, I see archaic agricultural technology being used and that's a legal industry. So, but we have the opportunity to first of all find out exactly how much energy this industry is really using. We don't know how much industry how much energy the illegal industry is using. Scott said earlier and I completely agree that one of the big problems is these operations are off the grid for the most part. The figure I saw that astounded me was that one plant grown illegally takes 140 gallons of gasoline in a field generator. And so we need to get these operations out of the woods, onto the grid so we can measure how much energy they're using and make it more efficient.

Greg Dalton: Michael Sutton is former president of the California Fish and Game Commission. We're talking about legalization of marijuana and climate, energy and water at Climate One. Our other guests are Roger Morgan, Executive Director of the Coalition for Drug-Free California and Scott Greacen is Executive Director of Friends of the Eel River. I'm Greg Dalton.

Let's go to our audience questions. Welcome to Climate One.

Female Participant: Hi, thank you three for coming. So I was wondering if you Roger could speak to the impacts of the secondhand smoke of marijuana and those public health effects.

Greg Dalton: Thank you. Roger Morgan.

Roger Morgan: Yes, I think the answer from a scientific standpoint is that it has the same impacts as tobacco smoke. There's some new research now because of vaping and in Berkeley you're probably seeing a lot of people vape. But the secondhand smoke from marijuana just as bad as it is with tobacco.

There's some other harms from marijuana that are much worse than tobacco and that's the impact on the brain. And because it causes structural and chemical changes in the brain for people under 25 years old that can cause permanent damage for adolescents, one out of six become addicted to it for adults above 18, one out of nine. I can tell you that addiction will ruin your whole life. There is now tremendous correlation between marijuana use and mental illness; schizophrenia will ruin your whole life. And there's some other things if you're interested I'll give you some information. You can study on the impacts of marijuana it cause mutations of sperm and chromosomal abnormalities. In my opinion this is the biggest hidden danger of marijuana that can impact in generation three and four out.

Greg Dalton: Let's go to our next audience question. Welcome.

Female Participant: So thanks again for the wonderful conversation this evening. Scott, I'm wondering if you can comment on the recent local regulations that have been passed in Mendocino and Humboldt counties. I'm talking about the land use ordinances, and whether or not you think they adequately address the need for environmental regulation and comply with existing state environmental laws.

Greg Dalton: Scott Greacen.

Scott Greacen: As the questioner suggests, Humboldt County has just passed and we expect Mendocino to pass soon pass a similar ordinance basically regulating land-use or purporting to regulate land use for medical marijuana. And everybody expects that this framework will be rapidly adapted to adult use broadly speaking, when the initiative that most of us expect to pass, passes this fall. The question is does the counties set of rules adequately regulate this industry, which in Humboldt County for context we're talking about something between 8,000 and 10,000 outdoor operations, excluding those indoor operations, excluding those trespass operations. And the short answer is no, I'm afraid the county's rules don't adequately regulate the industry. And the reason basically is that the county is punting to the state. It is looking to the state and saying you guys care so much about water rights, about fish, about impacts on fish from dirt getting into the stream from unpermitted land-use. You guys regulate it. We are going to issue permits to anybody who comes in and complies with the basic rules for water diversions and water rights and that's basically what they're doing.

From my perspective, what that fails to do is to say this is how big we can let this industry be without having overwhelming impacts on what are already critically endangered runs of Coho salmon and Steelhead in our creeks. Who are already overwhelmed by the industry at its current scale. We're basically saying come grow, get bigger, and again we're in a situation where it looks like about 10% of the existing industry is going to come in and get those permits. And the county's response to everybody else seems to be well, you know, maybe the DEA will say something to you. And that doesn't seem to be enough of an answer to that.

Greg Dalton: There's a real bonanza going on. Let's go to our next audience question at Climate One. We're talking about the legalization of marijuana on the ballot in November.

Male Participant: Thank you very much. Good conversation. I want to get to climate change and the impacts on water availability in the state. Certainly, there's been enough research showing that the state is already, shall we say over appropriated by 3 to 5 times. The actual water coming into the state is being used or has been allocated under water rights and permits. And it seems to me that without some kind of framework to begin to regulate this industry, we're missing a huge piece in the ability to look at the next 20, 50, 100 years of California's water; particularly as it becomes more unpredictable, as we look at groundwater overdraft in the Central Valley, and in Sonoma County and

elsewhere. Without that framework to start with, we're leaving another giant gaping hole in California's water future.

Greg Dalton: Michael Sutton, is this going to make California's water situation worse?

Michael Sutton: I agree with that comment entirely. I think water is the defining issue of California's environment and the environment of the American West in general. The drought just made an already serious situation worse. The drought isn't over; this issue isn't going away anytime soon. One of the benefits of legalization through the AUMA the ballot measure as the comment pointed out is to subject this industry to the regulations of the regional water boards and the state water resources control board, which strictly allocate water resources.

We have new groundwater laws coming on board that were enacted last year. California is beginning to regulate water more intelligently, partly pushed by the drought. Proposition 1, which passed last year is paying for wetlands restoration, river and stream restoration. We're on the right track, but this industry is – as long as it's illegal as long as it's in the woods and they're stealing water, 5 million gallons is the estimate that I saw and that's probably an underestimate statewide. Nobody is regulating the water use of this industry and that's just it doesn't make any sense for the biggest cash crop in California to go completely unregulated in terms of its water use.

Greg Dalton: Scott Greacen, there's already tussles between the wine industry, grape industry and the marijuana industry over the Russian River. So tell us how you think this might play out and who's winning that one? Isn't there some differences between vineyards who want water and illegal draws from the Russian River?

Scott Greacen: There are – as most of the listeners know a lot of vineyards in the Russian River already. I'm actually not really sure what you're getting at quite there. But, you know, we have on the one hand, a legal industry that is just beginning to be effectively regulated as the commenter noted. There's a really strong contrast with the way that we're not regulating the weed industry I think in both the Russian River and all of the watersheds that –

Greg Dalton: So they're taking it from where they can get it. Let's go to our next question at Climate One. Welcome.

Male Participant: Thank you guys. So Merce [ph] has passed and it looks like AUMA is gonna pass. What do you think it shows like California has made its decision as the people that that they want cannabis to be part of the state? What do you think the responsibility of the federal government is as far as regulation, taxing or just kind of putting their hand in?

Greg Dalton: Michael Sutton, first of all if you can unpack those acronyms for us. What those laws were referred to and what's the federal role?

Michael Sutton: So the federal role, it's a good question about the federal role here. As you know federal law currently prohibits interstate commerce in marijuana because it's a controlled substance. The federal government under the Constitution regulates interstate commerce, commerce among the states. The state legislatures have the right under the Constitution to regulate intrastate commerce, commerce within the state. So whenever marijuana is legalized at the moment because it's illegal at the federal level, the states can only control commerce within their borders. So theoretically at least if California legalizes marijuana it would be the same as in Washington and Oregon and Colorado and elsewhere that would be legal for intrastate commerce only.

But we've seen this before in many other industries where the states go first in legalizing or

regulating an industry. The federal government follows suit eventually, when enough states take that action. The federal government congress wakes up and says okay maybe it's time to make sense of this. Because what happens usually is the states all take a slightly different tack on regulation of these industries. And the federal government eventually has to step in and say wait a minute, doesn't make sense for 50 different kinds of regulation of aviation or airbags in cars or any of that so we're going to pass federal regulations, make it a more comprehensive regulatory regime nationwide. And I think that's what we need eventually.

Scott Greacen: Can I weigh in on that?

Greg Dalton: Sure.

Scott Greacen: I think there's one thing that the federal government needs to do right away and we're anticipating in the month of July. And that's to move cannabis, marijuana, pot whatever you want to call it off of schedule one. And that's the drug enforcement administration's way of classifying drugs and it says that marijuana is one, a drug with no medical use and two, a drug that is known to be harmful. And with great respect Roger I think the science is now pretty clear that neither of those things is true. It's a plant that's been used for medicine for thousands of years and the science is pretty clear that it's not as harmful as many products that we allow to be sold on the open market.

Greg Dalton: Roger Morgan.

Roger Morgan: I don't agree with that at all. Number one, it has a potential for harm. What is being sold today as medical marijuana is a far cry from anything that they had 5,000 years ago. You can't, if you want legal marijuana you can buy Marinol which is in a pill form. But the definition of any legal medicine it has to be known compounds potency and reproducible in a uniform manner. You can't do that with marijuana that goes from 4% to 96% potency and comes in all of these different forms. So and you don't have to take it out of schedule one in order to do more research on the benefits. There's been 12,000 studies already.

Greg Dalton: Let's go to our last audience question. Welcome to Climate One.

Male Participant: Thanks for having me. And my question is for Roger Morgan. A lot of people tonight, you know, were talking about almost like AUMA as an inevitability. And I wanted to ask you tonight what your read was on whether you thought California would actually pass legalization this year and why you believe what you, you know, believe with regard to the prospects of the initiative this year?

Greg Dalton: Let's define what AUMA is, is that an acronym for -

Male Participant: AUMA is the acronym for the Adult Use of Marijuana Act.

Greg Dalton: Okay, that's the initiative on the ballot, okay.

Roger Morgan: Right. My belief is it's not gonna pass. We fought this battle four years ago with Prop 19. The biggest problem we have is people simply don't know the facts.

So I'm dealing with 58 counties and law enforcement. My contention is that when people know the facts they're never gonna vote for anyone or anything that would proliferate the use of this drug. So we are working on trying to access part of \$50 million coming from the federal government that's supposed to be use for prevention. And if we can just educate parents, most importantly, parents and teachers it will be a very good start. And we got 10 to 12 million of those in California. So no, is

it gonna pass, no I don't think so.

There's some other subversive elements in this; about 83% of the cities and counties currently have bans. What this bill says is if they want to continue to have a ban it has to go back to a vote of the people. Well that's expensive, number one. Secondly, there's another little clause in here that says if there's anything that makes this less competitive so the state can't collect their taxes, then people selling this don't have to pay taxes, okay. And Colorado 40% of the market is still black-market sales. And third, you can't regulate it; we become a rogue nation in the eyes of all of our international allies. We're signatory to international treaties going back to 1961 and we are a joke around the world.

Greg Dalton: Michael Sutton, your response to the deficiencies and the ballot initiative.

Michael Sutton: As a proponent of the ballot measure I think it's gonna pass and I think it's gonna pass in a landslide. Because I think to most Californians it's a no-brainer on a whole bunch of levels to get this industry, this industry that isn't going away and is an enormous part of our state's economy, out of the woods, out of the shadows, out of the darkness and into the light of regulation so we can finally make it accountable for its environmental harms and its harms to society.

Prohibition didn't make alcohol okay overnight, but it sure made it a lot easier to regulate and tax and control than it was before.

Greg Dalton: We have to end it there. That's Michael Sutton, former President of the California Fish and Game Commission here at Climate One. Our other guests have been Roger Morgan, Executive Director of the Coalition for a Drug-Free California and Scott Greacen is Executive Director of Friends of the Eel River, an environmental group. I'm Greg Dalton. I'd like to thank our audience here at the Commonwealth Club and on air and online. Thank you all for joining us. And thank you for coming. Thank you.

[Applause]