Episode 613: Climate Change: What Does Science Really Say

Guest: Chip Knappenberger

WOODS: I solicited questions for you, and these are questions that people who have to deal with climate arguments on Facebook all day want to know the answer to. And in particular — well, I think before actually I ask you those questions, let me have you explain — I don't want to assume what your views are on the question of climate change. Tell me what your views are and how they're different from what we're told the mainstream view is.

KNAPPENBERGER: Okay, sure. First of all, you hear the term "climate change deniers" kicked around, and folks want to sort of tar people with that, but in fact, there are not many of those sort of people. And I'm not one of them. I would consider myself maybe a "lukewarmer," is what we've been calling ourselves. Human emissions of greenhouse gases affect the climate and they affect the daily weather — no doubt about that. But I don't necessarily think that they are an influence that's so strong that it drowns out all other influences. I think natural variability still plays a pretty large role, especially in the daily weather events and the local weather events that we all really interact with the climate and interact with the weather through. So I differ from a lot of what is called "mainstream science," in that I think the climate change from human emissions of greenhouse gases is proceeding slower than its forecast from climate models. Now, I think if it proceeds slower, it gives us more time sort of to get our hands and arms around the issue, and I don't think we need to leap into action to try to stop something that, a) I don't think we're going to have much luck on, and b) I don't think is going to be as big a problem as it's being sold to us.

WOODS: One of the questions that somebody asked is, "What should I tell my friends who think that human activity is the main cause of climate change and not be seen as the crazy conspiracy theorist?" And of course what he means by that is that anybody who has even your view is accused of not just having an unorthodox view but of being anti-science. And if you're anti-science, that means you are against the consensus of all the responsible people. How do you — it must be extremely difficult to combat that.

KNAPPENBERGER: Well, it's a complex issue. Climate change is measured on many different scales, both temporally and spatially. So if you were to look at a huge spatial scale of the global average temperature, let's say, there's a stronger signal of anthropogenic climate change than there is on the local scale, and especially on local

scale weather, like weather there was a blizzard or a flood or a tornado or a hurricane. Those local scale phenomenon are still largely driven by national climate variability.

And it's in the literature, Tom, so these folks don't need to think they're outside the literature. You only hear in the press about literature that supports the idea that global warming is causing all these bad things to happen, or you hear people who get paraded in front of the press that say, well, such and such weather event is consistent with anthropogenic climate change. But in fact — and what I do is spend a lot of my time delving into the scientific research and scientific press — or literature, I should say — and when you look in there, the picture is much, much more muddied than what is being presented in the mainstream press. All these things, all these extreme weather events, a) it's very difficult to link them to climate change at all, and b) it's even unclear as to how climate change may impact those weather events.

So you hear that — let's look at hurricanes. You hear that hurricanes are supposed to get worse because of climate change. Well, there's many aspects of hurricanes. Hurricanes are really only a problem if they hit land. So what you don't hear about is there's scientific research out there that says climate change might cause hurricanes in the Atlantic to stay out to sea and not hit land as often, and there might be fewer of them. And it's a whole realm of climate and severe weather interactions, and it's very unclear how anthropogenic climate change interacts with that realm.

WOODS: And yet, when we do have these extreme weather events, there is never ever anything approaching the kind of sober, scientific nuance that you might expect. We get the headlines telling us this is obviously a symptom of global warming and climate change.

KNAPPENBERGER: Right, that's — I spend a lot of my time trying to push back against that sort of thing. I say, look, if climate change causes bad weather, climate change must cause good weather as well, and you never hear anyone say, boy, the weather is beautiful outside thanks to climate change.

WOODS: (laughing) No, you don't.

KNAPPENBERGER: You never hear that, but it's just as consistent with climate change as anything else you want to make up. I don't push it too hard, because it's not real strong evidence that climate change is making weather better today, but it is overplayed in the press. And it's the whole, you know, "if it bleeds, it leads," and so this is what people want to hear about, you know, we're causing natural disasters — or unnatural disasters, if you will — when in fact it's much more subtle than that. But you never hear an opposing scientist get up there and say, well, the drought in California it looks like was not really caused by climate change. It's in the literature, but it doesn't make it into the front page of the press. And if someone like me were to point out that that literature exists, then you'd have folks calling me a science denier, when in fact I'm telling you what the science is. But that's just not how the press plays the game.

WOODS: I will leave the economic angle to Bob Murphy, who's been a coauthor with you on some work that you've done, and on my show notes page for this episode — this is Episode 613, so TomWoods.com/613, I'll link to Bob talking about climate change. I want to stick to just the scientific stuff with you. We heard a lot about 2015 being the hottest year in history. Was there any truth to that?

KNAPPENBERGER: Yeah, it was the hottest year in recorded history, in thermometer history, going back to probably the late 1800s — at the surface of the Earth. Now, the question is what caused that to happen? Well, there was a big El Niño phenomenon out in the Pacific Ocean, and when you have strong El Niños the temperature spikes for a year or so. There was a strong El Niño warm spike on top of a slowly evolving, a slowly warming climate, and when you put those things together you've got a record temperature. This is what we would expect to occur.

But just because humans are causing the climate to change does not mean that we're causing the climate to climate, a) in a particularly bad way, or b) that there's something that needs to be done about it immediately to try to halt that. Humans impact the environment all the time. I mean, look in the room you're sitting in, look out your window. So climate change is just another part of the way that humans are interacting and impacting their environment, but it doesn't mean we need to run out and immediately do something about it, especially if the things we're going to do about it quite possibly is worse than the problem that climate change is going to present — or the challenge, I should say, that climate change is going to present.

And I think that you and Bob have talked about the economics of it, and it's unclear that the economics of climate change are for the negative, and that's what we need to be careful about, because the response to trying to do something about it most likely will be a negative.

WOODS: Tell me something about the pause, this number-of-year period recently in which global warming appears to have paused, although I guess 2015 would have to be an exception to that then. Now, there are many excuses — I shouldn't probably use that word "excuses"; that's uncharitable. But there are many explanations, let's say, that the climate change crowd has advanced to account for the pause, one of them being — and this is one of my listener questions — that you have ocean currents trapping heat reservoirs at the bottom of the ocean. What do you think of any of these attempted — first of all, tell us what the pause is. What do you think of these attempts at explanation to try to explain it away?

KNAPPENBERGER: Sure. The pause was a period of 15 to 20 years, where the Earth's temperature did not rise nearly as fast as was being projected by the climate models, so this presented a problem to climate models and the folks that want to enact policies on climate change based on the results of those climate models. All of a sudden global warming wasn't happening nearly as fast as it was supposed to. So this sparked an interesting scientific inquiry as to why this was the case. Was it that the models were bad? Was it that the Earth is actually less sensitive to carbon dioxide emissions than the models presumed? Was it because natural variability was larger

than was built into the climate models? And if so, what were these various causes of natural variability that was causing this long period of slow down, because during the past 15 years, during which time temperatures did not rise as quick as they were expected — some people call it a pause because there was an extended period of time where the global average temperature did not show a statistically significant rise.

Okay, we can get down into the weeds as to the importance of that, but to me I don't expect that the global temperatures are not going to rise with a rise in carbon dioxide emissions in the atmosphere, so no one expected the pause to happen forever, and they're showing signs that it is not happening anymore. But the significance was that the temperature was warming a lot less than everyone thought it was going to be, and so folks started opening up scientific lines of inquiry into that and trying to explain what it was.

And as you alluded to, Tom, there are many dozens of excuses, if you will, to try to explain that, why the observations in the models diverge so much during the past decade or two. One of the things that someone put forth was that the heat was being buried down into the deep ocean. Fine. To me, that would be a good sign. I would much rather bury it down in the deep ocean than be up here on the surface affecting the weather. And the thing about it is you can bury a lot of heat in the deep oceans. The heat capacity of water is very low, and there's a lot of deep ocean, so the temperature change down there is on hundredths of degrees in the bottom of the oceans, virtually undetectable and doesn't have much of an impact, where if that same heat were allowed to be in the atmosphere and the land system, it might be a couple degrees of warming. So I don't think that's a bad thing, and I think if climate models had a better handle on it, maybe they wouldn't project as much surface warming going forward.

WOODS: I am sure — I was going to ask if you had seen it, but I am sure, given what you do, that you saw that just unbelievable exchange between Ted Cruz and the president of the Sierra Club — did you see that?

KNAPPENBERGER: Was it recent?

WOODS: Oh, I don't know. It was probably about a year ago. And if you haven't, you are in for an absolute treat, because the president of the Sierra Club was there, and they were talking about the way, I don't know, environmental regulation can affect minority communities. It was a rather obscure topic.

But they wound up talking about climate change, and Ted Cruz mentioned the pause, and he wanted to know what the president of the Sierra Club thought about the pause, and his response was, well, we agree with the 97% of scientists who say that there's significant global warming and it's caused by human beings. And Cruz says, well, that's not even close to what I asked you; I'm talking about, there is this period that shows no warming at all, and I'm just curious to know what you think about it. And so the president of the Sierra Club was basically denying there was a pause. And then when Cruz finally said to him, do you know what I even mean by "the pause," the Sierra Club

guy turns to his aides, who then whisper in his ear that he does know what the pause is. So he came back and said, yes, I do, and he identified it as a period back in the 30s and 40s. He had no idea what was going on.

But what he kept on saying was, we agree with the 97% of scientists. Now, 97% of scientists wouldn't have disagreed with those observations by Cruz; they're just numbers. But that 97% figure gets thrown at you — it must be thrown at you 10 times a day. What in the world are we supposed to do with that figure?

KNAPPENBERGER: Now that you tell me the story, I do remember the story, but the president of the Sierra Club really didn't know what Cruz was talking about. There's some recent data that suggests that maybe the pause is over, and they're pointing back at Cruz as sort of misrepresenting what was going on or relying too much on one particular data set, and I sort of — I agree with that sort of push back, that Cruz perhaps, he set up his reliance on the pause or discussion about the pause — they were sort of out on a limb, because the pause was going to give way at some point. To me it wasn't that robust of an argument, and then once it goes away it allows him to be attacked. The robust line of argument is that a whole wealth of observations show that global warming is proceeding slower than expected, and therefore we need to consider all that stuff before we consider what actions we want to take going forward.

But as to that 97% number, it gets thrown around all the time. Even the president tweets about it. But the president and many others mischaracterize what that 97% is, and so there's a whole lot of pushing and shoving about that number. If you say that 97% of scientists, especially climate scientists agree that human impacts are affecting the large-scale climate, like I said at the beginning of the podcast, I completely agree, and I'm comfortable that that's probably the case. But folks add on, that says, and they think this is very dangerous and we need to do something about it, and that is absolutely not the case. 97% of scientists don't think that. So it's falsely put out there to show that, a) we're impacting the climate, and b) oh my gosh, we need to immediately stop doing that and mitigate our climate impact.

And to me the second part does not follow from the first. We're having an impact on the climate; let's decide whether it's better to just adapt to that impact or whether steps to mitigate are worse than what we can expect to happen from the climate change. And I don't think we know the answer to that one. We know that there's a whole lot of people in the world that don't have access to electricity, and their life would be much better if they had access to electricity, and so I think if that electricity came from being produced from fossil fuels, it's still much better for them than the climate impact that might result from that. So we've got to be very careful with how we attempt to deal, again, with the climate challenge. Personally I think we can probably just adapt to the conditions that are to come.

WOODS: Yeah, I want to get back to that before we finish up, but there's a question here about sea levels. We always hear about the sea levels are going to rise and we're

going to have to accommodate ourselves to that. What can you tell us about what's really happening with the sea level question?

KNAPPENBERGER: Sure. I'm a climate scientist who's been studying the issue of climate change since the very beginning back in the mid 1980s. Out of all the things that are projected that might happen from climate change, the one thing that I keep the closest attention to is sea level-wise, because all the rest of the stuff is just changes to extreme weather patterns and weather patterns that the climate change doesn't invent some "megacane," some storm that we've never seen before. Hurricanes exist in climate and impact and hit the east coast of the United States and cause problems. Tornadoes exist, floods and droughts and all that sort of stuff, so it's just a matter of sort of dealing with changes in the character of those storms, which I think we can do.

What I think — sea level rise, though, presents a problem in that we have a whole lot of infrastructure, both in the U.S. and across the world, that's built right on the coast, because the coast is a good place to build stuff. And so if a rapid sea level rise were to be in the cards, that would be a problem. So as I mentioned, I keep a good eye on this sea level literature, because to me this is where the problem may in fact lie. My best assessment of the literature is that the sea level is rising as a result of climate change, but it's rising at a rate that we can probably deal with fairly readily. It's not that we won't have to adapt; it's not that we might have to build sea walls or other sorts of structures to deal with it, but it's not going to be a six-feet sea level rise in the next 100 years. It's more likely to be a foot and a half sea level rise in the next 100 years, which is about twice the sea level rise we saw during the 20th century, and we seem to have dealt with that pretty readily. I mean, we don't even hear about sea level rise during the 20th century and having to deal with it.

So it is an issue that bears watching; it's an issue that I think, again, is overplayed in the press, because they're trying to scare you into thinking that a large sea level rise is upon us just around the corner when it's not. You know, you always hear a third of Florida is going to be under water by the end of the century. That's not going to be the case. And taking steps to adapt to sea level rise I would think for coastal communities should be in the planning stages, because sea level rise is going to occur.

WOODS: All right, but if sea level rise by the logic of everything is bound to happen, even if only very gradually, then, playing devil's advocate here, couldn't the other side say to you, well, aren't you really saying that our catastrophe scenario of severe warming and major changes like sea levels, maybe for you they occur 250 years from now and for us they occur in 80 years, but we're dealing with a catastrophic situation in either case?

KNAPPENBERGER: Well, again, we're going to have to adapt to changing conditions. We've done that throughout the history of the human species, and we're facing that again; we're going to adapt to changing conditions. The changing condition I think is going to be sea level is going to gradually rise, and we're going to have to deal with that. I say I'm happy that it appears that sea level is rising at a relatively slow to

moderate pace, because I don't think, despite some people's best intentions, that we can really do anything about it. Fossil fuels are producing most of our energy, about 80% of the global energy supply, and it's going to be that way for years to come. And a lot of the warming that's going to come from that, some of it's already in the system, and there's more of it to come.

So from my standpoint, I think climate change is going to be modest, and I'm happy about that because I don't think that there are things that we can do about it in a very timely fashion. I do not think that trying to — well, I don't think mitigation scenarios where you severely restrict carbon dioxide emissions are a viable thing to do, because it robs people of the energy that they need to live, and so there's no off-the-shelf technology that's going to fix the problem, and so let's be glad that the problem is manageable, because there's not a whole lot that we can do about it anyway.

WOODS: Right, right. I mean, obviously it's theoretically possible we could simply abandon industrial civilization, but for most people who don't hate mankind, that would be a worse outcome.

KNAPPENBERGER: Absolutely.

WOODS: I would rather adapt to climate change than to take an extreme measure like that. Let me ask you one more thing. This is again a listener question. He said, "I'd be curious about his take on the so-called medieval warming trend when it was warm enough in England to grow wine grapes. It's obviously much cooler than that today, so what does that tell us about the role of human beings in global warming?"

KNAPPENBERGER: Yeah, natural variability happens on all timescales, from weeks to months to centuries to thousands of years, and obviously ice age intervals and geologic eons and sort of stuff like that. That's not — just because it was warmer in the past or colder in the past does not mean that humans are not having an impact currently. There's an argument that says, well, because it was potentially warmer during the medieval warm period, that means that climate change that we're seeing now might in fact be natural. To me that argument says that natural variability might be part of it, but also we know that we're putting a lot of carbon dioxide into the atmosphere and that's a greenhouse gas, and greenhouse gases act to trap heat in the lower portions of the Earth's atmosphere and at the surface. So we should expect there to be a warming pressure from increased concentrations of greenhouse gases, and so we are seeing that. So humans are having an impact. It's happening on top of natural variability.

It's interesting, Tom, though, that — I haven't taken a recent climate class, because I've been out of college for 30 years or so, but back then when you took climate classes, periods in the past that were warmer than current ones were always associated with good times, and periods that were colder than average were always associated with bad times. So you had the medieval warm period, and you had the Roman climate optimum, and then you had the plague in Europe and all that Black Death happened during the cold period. So cold is much worse for humans than warmth is, but over the past, as the situation has evolved, people have tried to —

climate scientists, in fact, have been trying to push back and not call it the medieval warm period anymore and not call it the climate optimum. They're trying to change the terminology that folks use lest they get apparently the wrong idea.

WOODS: Now, Chip, I want to put on TomWoods.com/613 links to a couple of papers of yours, "The Case Against a Carbon Tax," which you wrote with Bob Murphy and Patrick Michaels, and then a paper your wrote just with Patrick Michaels, "Climate Models and Climate Reality: A Closer Look at a Lukewarming World." Is there anything else that you'd like me to put up there? Any link to a site? I mean, I know you're with the Cato Institute; do they have a part of the site that I can link to?

KNAPPENBERGER: Yeah, I mean, if you go to Cato — I don't have it open in front of me right here, Tom, but there's an "Experts" page on Cato, and if you scroll down until you find me, you can get a link to all the various blog posts and working papers and policy analyses that we've done with Cato. I also am the assistant director for the Cato Center for the Study of Science, and we have a web page on the Cato site that talks about all the works that Pat Michaels and I have been doing, along with Bob Murphy has helped us out from time to time. We have a lot of other good folks working for us, doing a lot of not only climate change but also looking at how the role of government funding of science impacts the direction and the course of science, and it's not always in the best way, and that's what the Center for the Study of Science is sort of looking into. Perhaps the best example of that is climate change, where you have such an overwhelming amount of government funding of the science that it really directs the scientific results towards the direction that the government, the funding agent wants it to go. So we have lots of pretty neat resources there at Cato for folks that are interested in the science of climate change.

WOODS: I'm really interested, by the way, in that subject of government funding of science, because there are people who will say I can understand why you don't want the government involved in, let's say, price controls or rent control, and I can understand you don't want the government producing shoes, but for heaven's sake, the government has to be involved in science. So it's one of the hard questions. And then I read that book, *The Economic Laws of Scientific Research* by Terrence Kealey that absolutely blew me away.

KNAPPENBERGER: Yeah.

WOODS: I learned something new on every page. Unfortunately, I can't — I email him once, he writes back to me, and then I never hear from him again. I can't get him on the show, but I want to talk about that subject, because it's so important.

KNAPPENBERGER: Tom, he's associated with Cato. He's an adjunct scholar at Cato, and he's associated with our center there, and I believe he's coming to the U.S. for a couple of months later this year, so maybe we can hook him up to come and you can spend some time with him.

WOODS: I appreciate that. I'm going to have to corner him one way or another, because that's one of the books that, it just stunned me. It just completely — I already kind of — my instincts were in that direction, but then I actually felt intellectually fulfilled holding that view.

KNAPPENBERGER: Yeah, exactly.

WOODS: Yeah. Okay, well, Chip, I appreciate your time and your excellent answers and all the great work you're doing. Thanks so much.

KNAPPENBERGER: Sure, Tom, thanks for having me.