

One Davis Square, Somerville, MA 02144 | T: 617.591.3300 | F: 617.591.3399 | www.naturalstandard.com Question & Answer with Jeff Corwin

Wildlife biologist Jeff Corwin has worked for the conservation of endangered species, natural resources, and ecosystems around the globe. He is the host of several television shows, including Animal Planet's Jeff Corwin Experience and Food Network's Extreme Cuisine, and is the author of several books, including 100 Heartbeats: The Race to Save Earth's Most Endangered Species.

Dr. Catherine Ulbricht: Welcome everyone to the **Natural Standard** webinar series, this is Dr. Catherine Ulbricht speaking, and I have on the line here with me one of my colleagues Karina Gordin who is a medical journalist. We are thrilled today to be able to spend some time with Jeff Corwin, a wildlife biologist and Emmy-winning host.

He's worked for the conservation of endangered species and ecosystems around the globe. He is the host of a variety of popular television shows, including Animal Planet's *Jeff Corwin Experience*, *Corwin's Quest*, *Spring Watch*, and *King of the Jungle*; Disney's *Going Wild with Jeff Corwin*; *Investigation Earth* with the Discovery Network; NBC's *Jeff Corwin Unleashed*, which was nominated four times for an Emmy and won an Emmy for Outstanding Host; and the Travel Channel's *Into Alaska and Into the American West*. His popular television series has been seen in 120 countries worldwide. He also co-created and co-hosted CNN's *Planet in Peril* with Anderson Cooper in 2007. On November 20, 2008, Animal Planet premiered *The Vanishing Frog*. This powerful documentary highlights Jeff's year-long global odyssey exploring the mass extinction of our planet's important amphibian species. *Men's Journal* recognized Jeff as the world's greatest host of a natural history series.

Jeff's book, *Living on the Edge, Amazing Relationships in the Natural World* is now in its 5th addition. Presently Jeff's next book, *100 Heartbeats*, which explores the plight of our planet's most endangered wildlife species, is available for purchase from Rodale. Along with this new publication, there will also be an eagerly awaited companion television series under the same title. Through Puffin Books, Jeff is also publishing a series of books for younger readers, focusing on wildlife, ecology, and conservation. Jeff's wildlife and conservation work has been regularly featured on a variety of television series, including CNN, FOX, *Good Morning America*, *The Today Show, CBS Morning Show, Ellen DeGeneres, The Tonight Show with Jay Leno, Late Night with Conan O'Brian, Regis and Kelly*, and *The Oprah Winfrey Show*. We're really lucky to be able to have Jeff here with us on **Natural Standard**.

Jeff Corwin is a native of Massachusetts, as are we, and he's established an interactive museum and environmental education center called the EcoZone, which is based in Norwell, Massachusetts. The goal of the EcoZone is to build awareness for the wildlife and ecology unique to the wetlands of Southeastern Massachusetts. He has B.S. degrees in both biology and anthropology from Bridgewater State College, a Master's in science in wildlife and fisheries conservation from the University of Massachusetts-Amherst, and an honorary doctorate in Public Education from Bridgewater State College. When not traveling the world, Jeff can be found at his home off the coast of Massachusetts, where he lives with his wife, Natasha, and two daughters, Maya Rose and Marina Faye.

I will now pass the microphone over to Karina Gordin who is going to ask Jeff a couple of interesting interview questions. And thank you again for being with us here today.



One Davis Square, Somerville, MA 02144 | T: 617.591.3300 | F: 617.591.3399 | www.naturalstandard.com Karina Gordin (KG): Yes, I would personally like to thank Jeff Corwin for taking time out of your busy and impressive schedule to join us.

According to the documentary *Planet in Peril*, which you host with Sanjay Gupta and Anderson Cooper, the Earth's population increased 400% from 1.6 billion to 6.1 billion over just the last 100 years. So my first question is: what is the real issue, overpopulation or the way the growing population manages the environment?

Jeff Corwin (JC): Ok, so what is the issue with regard to overpopulation? And is it a matter of an increase in our species or the way our species uses resources? So, where are we right now with our species? Right now, we are easily hovering at around the six billion mark, and it's predicted that we will reach 9-9.5 billion people, human beings, occupying this planet within about three decades from now. So not even midway through the 21st Century, our population is going to increase by about one-third from where it stands now, and I think it is really a marriage of both issues

It is not only an increase in the human population that impacts habitat and wildlife because the more there is of us, the more we need to consume to sustain the individuals in our species, but also there is a correlation between how we use the natural resources today as well. We are not sustainable. The challenge is: how do we harvest? How could we exploit at a level that allows us to have a good quality-of-life existence, while at the same time, not exhausting the natural resources around us? I would say the two work hand-in-hand, and both rapid human population growth and our failure to sustainably use natural resources work in tandem together to have an even greater impact on our natural resources. And when I say "greater," I mean in a devastating way.

KG: I understand. So that brings me to the next question. During a visit to India last year, Secretary of State Hillary Clinton said: "It's odd to talk about climate change without talking about population and family planning." So how is over population linked to climate change or other environmental changes?

JC: The relationship between human population and climate change comes down to a resource use. So what causes climate change? Well, what is climate change? Climate change, basically, we don't have to call it global warming, but scientifically, global warming doesn't make sense or it's not accurate, so we call it climate change, but in truth, it's a warming of our Earth.

Our Earth is warming because we have an increase in greenhouse gases, and we know this because we can go back in time. We can examine and harvest ancient, pristine samples of atmosphere locked up in ancient slabs of ice going back hundreds of thousands of years. We can compare the atmosphere by looking at chemicals like carbon and phosphorous and sulfur, and all these other chemicals, and nitrogen, and we can compare them with our atmosphere today. We see that the warming of the Earth correlates with the increase in these chemicals, which then correlates with the development of our species, both in population and in industry, and impact on the natural resources, if that makes sense. So simply, the more there is of us, the more we use.

Today, carbon is largely locked up in forests. For example, if you go to the forests of Indonesia and Malaysia, specifically if you go to Sumatra, you would find that their forests (both dry forests and rainforests) contain 70 billion tons of carbon. That carbon is sequestered in that forest; it is locked up. When you cut that forest down and burn it to make room for agriculture or homesteading or farming, or you're looking for minerals or you're mining, or whatever you're doing that leads to deforestation (and this isn't limited to that part of the world, this unfolds in rainforests throughout Southeast Asia, throughout Africa, throughout South America), that carbon



One Davis Square, Somerville, MA 02144 | T: 617.591.3300 | F: 617.591.3399 | www.naturalstandard.com then gets released in the atmosphere, and then it contributes to climate change. You're taking nature's cure for climate change, which is locking that carbon up, and you're literally doubling the impact because it's like you're breaking open the bank, or you're opening up Pandora's box, and you're letting it out, and you send it up in the atmosphere.

Of course, each of us as individuals, we use this material. We harvest this material in the form of carbon. We all use carbon every day. I'm in a car right now; I'm using carbon. I'm going to the airport. Then I'll be using that carbon to fly to Italy. We all do this. We all contribute to it. As our species grows, we contribute to it even more.

Now, back to that forest in Sumatra. It is largely being destroyed today to make room for palm oil. One in every 10 products we all use around the world contains palm oil. Palm oil is just one out of 1,000 potential examples of how we negatively interact with our planet by contributing to climate change through the burning and the using and the de-sequestering of carbon.

KG: But I read that the EPA did acknowledge some positive impacts of higher CO₂ concentrations, and one is faster-growing trees in tropical forests, which help offset deforestation.

JC: That's true. The truth is rainforests are very important places. Rainforests take up only about 5% of our planet's surface. In the tropical rainforests specifically, you'd find pan tropics in places like Asia, the neotropics like central and south America, sub tropical Africa. So they're only 5% of the planet's surface, yet much of our terrestrial carbon is there. We lose about 3,000 acres of rainforest every hour. When we lose that, we're not only using natural reservoirs of carbon, which helps us deal with climate change, we are also using, losing up to 60% of our planet's life. And of that 60%, we are impacted because there are many who argue that 40% originated in tropical rainforests.

KG: So considering all that you said, during the Copenhagen Summit on Climate Change last year, officials discussed possibly implementing a one-child policy to control overpopulation. Do you see that as a reasonable way to address overpopulation?

JC: I would like to *not* live in a world where we tell people how many children that you can have. I think there are great prices we pay by limiting our reproductive freedoms. With that said, at some point there has to be some level of accountability. I always am personally struck and struggling with the challenge and the desire to have a big family, biologically, when the reality is that there are hundreds of millions of children living on our planet who do not have families.

I grew up in a family where we had an adopted member of our family. My wife and I, we genuinely explored the opportunity to adopt, but the reality of this option, it is very difficult and very challenging and comes with controversy. You would think that such a logical opportunity like this would be accessible and user-friendly for good, qualifying families; but the truth is that if your family is in a good position to adopt, it requires years and an incredible amount of bureaucracy and huge amounts of funding to provide a child with a home. I look at adoption as a way for families to become robust and grow, but yet it is not always realistic. I do think that we need to look at our population growth, but I do believe it comes to individual accountability and not necessarily making laws that require you, in this sort of Machiavellian sort of system. I don't know if I'd want to live in that world.

I do believe we need to make radical steps in how we look at our species. It's very hard for human beings to look at us as a species. We want to see ourselves as something above the world of biology, but the truth is, all these things that we say make us special and unique, in fact, really truly define our biology and make us more animalistic, and there's nothing that makes us



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KG: Next, in the MSNBC documentary *Future Earth: 100 Heartbeats*, you focus on endangered species that are on the brink of extinction. So right now, what are we doing that may put one out of every five species at risk of extinction?

JC: Statistically, we may lose about one species every 20 minutes, and the rate of extinction today is only matched by the loss of dinosaurs, which occurred 55 million years ago. Extinction is not new to our planet. We've had five major extinctions, and in fact, if you look at the natural state of our planet beyond the impact of human kind, the biology and the richness of species is really paltry compared to what you would have found in the Cambrian and the Begonian periods.

The difference is that the extinction that has happened in the past is largely the result of a natural occurrence, albeit catastrophic and graphic and monstrous, but natural: an asteroid, natural changes in climate, super volcanoes, and things like this. But the extinction of today is the result of us. We are the asteroids impacting our planet, and basically, the extinction is the result of a perfect storm of factors: habitat loss and climate change, species exploitation, environmental degradation like pollution, and the unsustainable growth of our species. All of these factors come together to make this perfect extinction storm, which is why we lose these species.

We live in dark times in conservation. Look what's happening right now on the coast of New Mexico. I was just down reporting for CBS News, and the idea that we've gone to the belly of the Earth and we've opened up this Pandora's well (which conservatively, is releasing 250 thousand gallons of raw Louisiana crude into our pristine ocean every day), this is just one small example of how we negatively impact our Earth and how we have a connection to extinction. While that oil bubbles out into the gulf, people may not realize that the entire population of Atlantic blue fin tuna (that's from Nova Scotia to New Mexico), that entire population breeds within a few miles of that oil spill. We could, in theory, drive that species to extinction solely from this one event.

We have, conservatively, 10 species of rare sharks that only breed within 20 miles of that spill.

The least tern population of that coastline is 2,000, and this is the time they nest, and they are nesting at the moment of this oil spill.

The Brown Louisiana Pelican was driven to extinction, miraculously recovered and may now be pushed to extinction once again because of this one event. That's the bad news.

The good news is that there are many examples in nature where, when push came to shove, we shined as a species. You can look at the black-footed ferret (a species that was considered extinct in the wild) that is now on its way to recovery. The American red wolf, which was considered extinct, and lo and behold, we were able to find a few examples of this species, and now there are 100 living in the wild. The California condor.

The secret to saving species is protecting habitat. You need to have habitat for species to live in. In fact, all these factors that contribute, for example, to climate change, one of the greatest tools to alleviate climate change, to protect species, is to protect the ecosystems where these species live, and that contributes to climate change when they're destroyed.

KG: Time really is of the essence, and we're working within a limited time frame to prevent the 100 heartbeats model.



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JC: We are running out of time. We need to make radical steps if we're to salvage what life remains on our planet. I don't think it's impossible, but I do believe this is a rare moment for us to truly invest in the next generation by making the incredibly crucial decisions, and everything from how we use resources to how our species increases in size to defining what is quality of life and the price we pay for certain measures of life quality, and ultimately, what kind of world will the next generation of human beings have and inhabit. The truth is, we may present them with an environment that is inhabitable.

KG: Now in your documentary series *Feeling the Heat*, you say that global warming has a major impact on endangered species. Some scientists assert that the Earth warms and cools as part of a natural cycle. If we take this view and assume that humans do not factor into global warming, then should we let the climate change take its course?

JC: There's a lot of evidence out there; there are reams and reams of data that suggest that the climate change occurring today is not the result of a natural warming of the Earth, that we can literally look at our behavior over time, over hundreds if not thousands of years and see how that connects to a warming Earth. We also know that there are species on our planet today that are not only indirectly, but also directly impacted.

There are hundreds of species, if not thousands of species from the Pica. The Pica is a species of unique rodent that can only live in alpine habitat in North America. It cannot survive in temperatures higher than 70 degrees, and right now, where it lives, it now warms into the 70s, when it normally wouldn't have. We know that these species will probably disappear because of that.

We all know about polar bears. You know penguins dive after fish that need cold water. The warming coastlines in South America and Southern Africa and Australia and Antarctica, as they warm, these birds must go further offshore and deeper, and they go in jeopardy; they go into harm's way.

There are many, many examples. Insects that live in the Arctic are now hatching out earlier because the arctic is warming, so they appear earlier but unfortunately, the birds that rely on these insects to feed, to get their energy, when they have these brief windows to nest, they arrive to the arctic after the insects hatch because they're not migrating by temperature, they migrate celestially and by light, and light by the day, the light cycle, the photo cycle. There are thousands of examples I could give you all around the world, and places that you never would have thought of. Tropical areas like the Maldives, and places that are going to be swallowed.

These aren't the things we're looking toward the future. These are things we're seeing now. I mean you can go and see the permafrost that's actually crumbling away up in the arctic. You could go to Jakobshavn glacier. This is a giant monolith of ice that has existed for tens of thousands of years. Every day it loses enough water to provide Manhattan with water for a year. These changes impact our planet and impact other species and ultimately impact ourselves. What's truly terrifying is that we're now seeing the impact of climate change happen at a far faster rate than the most liberal estimates a decade ago.

KG: But is climate change still the biggest threat when considering other factors like oil contamination, heavy metal toxicity, and pollution? Regarding the Arctic, I read for instance, that it has become a repository for some of the world's most toxic chemicals that are relatively high in concentration.



One Davis Square, Somerville, MA 02144 | T: 617.591.3300 | F: 617.591.3399 | www.naturalstandard.com JC: Absolutely. I think all of these things work together. I think climate change is a huge issue, but we're not talking about climate change right now. We're talking about this hole in the Earth that's like a sucking cesspool of petrol and crude, and we now know that they're looking at this being plugged maybe in a month or two months from now. We're looking at something that's going to be 10 times, maybe 100 times more devastating than the Valdez, in an area that is far more sensitive. So all of these aspects, all of these examples of our failure to properly manage and wisely use our natural resources, work together.

For a species, for example, that's been threatened or jeopardized because of climate change that has been pushed to the brink, maybe this oil spill is the straw that breaks the camel's back. It's affecting the stability of that species. That's how we have to look at it. It's always the element; always the bleep that just appears on the radar screen that gets you. You look at the iceberg in front of you, but you don't realize it's underneath the tip of that piece of ice; it hits the helm of the ship from the side that causes the ship to sink.

KG: While we still have some time, I would like to switch gears and briefly talk about your Food Network series *Extreme Cuisine*, if I may. My first question is: besides introducing exotic foods from different cultures to American viewers, what else can extreme cuisine teach us?

JC: The mission of *Extreme Cuisine*, which I'm actually heading right now to film in Italy (the series re-launches again in mid-July for our second season), is really to look at foods that are the glue that binds cultures, that celebrates a community, that gives us access to our ancestry and our ethnicity. Largely, the mission is to look at renewable and sustainable foods, and the catalyst behind this series is the failure of the American population to have a connection to food. Most people, and not just in America, but around the world, many of us have lost the connection to our natural resources.

The moment for me to launch into the series came when one of my daughter's friends was at our house, and I was making them lunch, and I was really taken aback to discover that this friend of my daughter had no idea that food was beyond the refrigerator or the supermarket. So I thought of this idea: what if every day, your challenge was to wake up and to burn fewer calories and to get your calories for what you needed to survive. If you needed 2,000 calories to survive that day, how would you go about not burning 2,500 calories to get those 2,000 calories?

And what if you didn't have electricity or a supermarket? What if you had to harvest and grow and hunt and fish for everything you needed to survive? What if the modern foods we have in places like Europe and the United States, what if we followed the origin of that food, like following the potatoes to the Inca community the Andes or following rice to the rice fields of Southeast Asia, or follow the byproduct of throw away (like bits and bobs of an animal's parts) into a meal that we would twist our noses up at.

The truth is, you know these people will take material like this and make the ultimate feast from something incredibly simple and humble. How you go to these fancy restaurants in New York, and you pay top dollar for this fancy meal like ceviche, the ultimate simple ancient fisherman's last-minute bit of protein (lime juice and salt and some hot pepper and cilantro to make it all go down) and that's really the impetus behind this series.

The mission of the series is to reconnect us to food. The idea that food is what connects us to our past and really brings us into the future, with our species, with our children. I hate fast food. I hate the idea of fast-food culture. There's nothing that makes me more angry than to find out that my daughters went for a play date with somebody and were so excited because they had this fast-food burger. I feel like all this investment went to waste.



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The truth is, I think we need to rebuild that relationship, and I think a lot of what's wrong with us today, when it comes to how we use our resources and our failure to protect species, comes out of not having a relationship to our natural resources, and there's no more direct of a relationship than the energy we need to fire our bodies, our own personal organic engines of our own survival.

It's a fun series; it's a series about adventure and humor, but ultimately my mission, that's basically my lure to pull them in. Ultimately, I want people to rethink the food they eat every day and make better decisions, but not only physically for their health, I mean not only is it bad for the environment but it's bad for us; we've mistaken quantity for quality, and that's why not only are we behaving unsustainable for the Earth, but look what it's doing to us physically. Why do we have such an increase in obesity? It's not only in North America, but also throughout parts of the world now that traditionally didn't have that challenge because we have forgotten our relationship to our natural resources, and that's exemplified by our failure to really take care of ourselves.

KG: But America wasn't always about hamburgers and fast food. Was there anything extreme about colonial America's cuisine?

JC: People worked for their food. I mean, you raised your own food; you hunted your food; you grew your food. We had this incredible relationship. We've lost that connection. We take food for granted because we have it near us all the time, but the truth is, we pay a price for that. In some ways, we do eat much healthier, and actually that's not the correct term, in some ways we have the luxury of getting all the calories we need, and in theory, all the nutrients we need, but remarkably we now know that sometimes people who are actually underweight and who are actually challenged in getting food can sometimes be healthier. In fact, there are some studies that show that childhood obesity has similar levels of malnourishment that you'd find in developing countries.

KG: Is there any hope for typical busy Americans to adopt some of the principles emphasized?

JC: I do believe there is hope. There is a tremendous movement underway in this country; it's called the slow-food movement, and it's the idea of knowing where your food comes from and having a relationship with the people who grow your food, with the farmers. It's maybe in the winter time, not having fresh berries or fresh fruit, that have directly contributed to climate change by being in an airplane, being shipped to you, but the idea of working with local farmers who are able to present that to you in a sustainable, organic way of preservation. It's the idea of the food you eat coming from your neighborhood. It's about building farmer's markets and restaurants that are buying from local providers and producers. It's about avoiding meat that has been produced at an industrial factory-farm level.

One of the big decisions that we've made in my own family's life that is very important to us is that we have done our very best to steer clear of animals that have been produced at an industrial level. We try very much to get all of our protein locally. I go out and harvest my own protein. It's a lot of work, but it provides my children with an example of when you take care of our planet, when we secure our natural resources and the habitat that sustains these resources, whether in a species of plant or animal, or a landscape or a habitat, we are ultimately sustaining ourselves.

I believe there is hope, and there's a huge movement underway to redefine and reboot our relationship with food. The best way to do it, for example, if you like eggs for breakfast, I would be finding someone in your neighborhood who is producing their own eggs. You would be shocked at the amount of people who produce eggs, and that's just one simple thing you can do.



One Davis Square, Somerville, MA 02144 | T: 617.591.3300 | F: 617.591.3399 | www.naturalstandard.com KG: Within a one-mile radius of my house I have 16 supermarkets.

JC: You have 16 supermarkets, but you know what, there's probably a girl or a young guy in 4H who is growing their own bantam chickens, Rhode Island reds, and I'll tell you what, I'll give you 4 or 5 bucks for a dozen eggs, and I'll be there every week, and I'm going to get my friends to get eggs from you too. That's what the slow-food movement is all about.

KG: Have any endangered animals ever been eaten on your show Extreme Cuisine?

JC: Never. In fact, it's a huge filter for *Extreme Cuisine*. The mission of *Extreme Cuisine* is not to eat prestigious food. It's not for this very high-brow fancy moment. Ultimately, the food we eat may appear extreme to the novel window of an American audience, but it's often peasant food where we're at, and in order for us to get the six stories we're doing in Italy, we have walked away from a dozen stories because they may have been exciting and interesting, but they fall out of the character and the standard of the bar of what I try to have for this series.

The way we look at it is, if it is something we that we feel is inhumanely harvested or unsustainably harvested or has a negative impact, we steer away from it, and we drift toward material locally produced and consumed. We show a level of sustainability and show a relationship between human kind and the resource that they're dependent upon.

KG: Yeah, that is very evident in your show. Not all cultures can tolerate certain foods as well as others can. So for instance, Asian and African countries tend to have higher rates of lactose intolerance, while European and Middle Eastern countries have higher rates of gluten intolerance and celiac disease. So how is this reflected by the regional cuisine?

JC: That's very interesting; I think it comes from our natural sort of hybridization of ourselves culturally through the foods that we eat. We like to think that human kind is the puppeteer that manipulates the wild wolf and turns it into the Shih Tzu or German shepherd. We like to think of ourselves as the one who took the ancient horses on the steps of Mongolia and broke them into Black Beauty and pulling Budweiser beer, but the truth is, one could argue; there is a theory that we are formed and manipulated and we change not only culturally, but also physiologically through genetic manipulation, just like the animals we depend upon.

If you are someone who is lactose intolerant and you were born a century ago, you probably wouldn't have survived to reproductive age if you lived in a dairy-dependent culture, and if you were someone who had celiac disease or were predisposed to that, you probably wouldn't have done very well in a high-carbohydrate-based culture or wheat-based culture. So you can see how nature deals with us just as much as it does with the other non-human earthlings, we share this Earth with.

KG: Even to this day, those ethnic cultures eat so intuitively, you've noticed?

JC: Here is what I've discovered. For many of us, we make cooking a chore. The idea of having a meal is less celebratory, less a moment about family and more about just filling your belly. And then you go to many parts of the world where getting the food and preparing the food is culturally vital, and it's a moment that unites members of the family, and everyone in that family has a place in the production of that specific meal, and it begins early in the morning, and it ends often late at night when the meal is consumed. It's often produced in a kitchen without electricity, with an old knife or a mortar and pestle, or an old grinder or millet that's gone from one generation to the next.



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You see that moment of meal has been interlaced with cultural significance, and I think that is
often the vehicle or the catalyst behind that moment of consumption. I think the closest we can
get to that today is a Thanksgiving feast. But for many people, that's what they do every day. For
many people around the world, it's tough, and when you get a moment where everyone's alive
and sitting around the table and your bellies are going to stay full and you're not going to go to
bed hungry, that's a moment to celebrate.

KG: Exactly, and the end result is less food-related disorders.

JC: It's interesting. Many of the medicines we use today come from nature, and if you for example, go to Bedouin cultures and places like Morocco, they have very few examples of diabetes. We have many, many thousands or perhaps millions of people in the United States who suffer from diabetes and have to radically intervene with their own survival depending on what type of diabetes they have, like insulin shots every day. But they discovered that camel's milk contains high levels of insulin and that people who were predisposed to diabetes were able to literally medicate themselves with the consumption of pure camel's milk. I say trial and error and through experimentation from one generation to the next, we're able to come up with the pathways for survival for those specific situations. But I think if it got beyond that and was more extreme, that individual probably didn't survive and that probably brought that disease challenge within that family to an end.

KG: Mr. Corwin, thank you so much for your time, and on behalf of everybody at **Natural Standard** as well as the world, I would like to sincerely thank you for devoting so much time and energy to exposing the perils of our planet, preserving wildlife, and just inspiring us to be more aware and appreciative of the natural wonder that is our Earth. Safe travels!

JC: Thank you guys very much.