

# The Great Simplification - Frankly #5

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Nate Hagens (00:00):

So here's what the plan is today. We have just completed our 25th episode of The Great Simplification, and we kind of wanted to level set what we've learned, questions from our listeners, both in our inbox and on the Facebook group, The Great Simplification, and on the YouTube. You, my former student and our newest hire at Energy and Our Future and the curator of this show, I thought it would be good for you to tabulate those questions and interview me, as it were. So that is the plan, Lizzy. So I'm handing the mic to you.

Lizzy (00:50):

All right. So to start off just for, I guess, any new listeners or people who may still be unclear, you have three terms or vocab words that you frequently used, being energy-blind, the super organism, and the great simplification. I was hoping you could maybe just give us a quick rundown on all three of them, what they mean to you.

Nate Hagens (01:14):

Yes, we are energy-blind as a culture. We just swim in energy like a fish swims in water, and we are oblivious to how massively it underpins our society and our expectations and our institutions and our future lifestyles. The great simplification is over multiple timelines. We have just experienced two centuries of a great complexification. We have a podcast upcoming with Joseph Tainter who wrote a book about the collapse of complex societies, that are based on problem-solvings adding more energy.

Nate Hagens (01:58):

Now, we are going to be faced with problems. It's not that we're running out of energy, per se. It's we're running out of the cheap and affordable energy at scale to solve the problems in the same way that we've become accustomed to. So in the near term, the great simplification is a recalibration of our monetary claims on reality with the underlying physical and ecological reality, and that's going to manifest in a Great Depression sort of rolling period and a lot of strangeness.

Nate Hagens (02:38):

But over centuries, it's also going to be a Great, capital G, simplification where human societies have to get by with less net energy, less surplus energy to support our societies. The more people that are aware of this, I believe, the better our decisions and our collective actions will be.

Lizzy (03:05):

Can you break down the mechanisms that might lead to a great simplification?

Nate Hagens (03:11):

Right. So right now we have governments and central banks around the world that are kind of playing an accelerated game of whack-a-mole. They're responding to the immediate crises of the moment without a longer term game plan. The game is the plan. What's happening is the energy blinders are

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being removed, ripped off in the case of Germany and Japan and other places. Because, for instance, Germany was one of the leading countries in the battle against climate change, and they made all kinds of rules for the G7.

Nate Hagens (03:52):

They grew their renewable energy. Now that has to be paired with natural gas, otherwise the country is going to freeze in the winter and many industrial processes and manufacturing companies are going to go out of business. So what you're seeing now is a repeal of some of the rules to minimize emissions are being scrapped so that they can have access to more energy. Same in the United States, Biden on one hand is saying we need to go to renewable energy and optimize climate change.

Nate Hagens (04:35):

On the other hand, he's telling oil companies, "What's the deal? We need more oil because gas prices are so high." So what society is facing right now is this giant nexus of monetary reality from our cultural perspective with an underlying energy foundation that most people are unaware of. Eventually, we keep papering over our problems with more debt and more interest rates and more central bank guarantees.

Nate Hagens (05:11):

Eventually, instead of 2008 when we had a too big to fail situation, eventually we're going to have a too big to save situation. If France has too much debt and needs to be bailed out, there's no central bank in the world that would be able to bail out France. So there may be some sort of George Soros versus Bank of England moment in the future where the financial markets, which are very smart collectively but still, because there's a lot of economists and MBAs there, they don't really understand.

Nate Hagens (05:49):

They understand the importance of energy in our economy, but not from a biophysical one barrel of oil does five years of our labor sort of standpoint. So the great simplification will manifest when there's a musical chairs moment in the financial system where there aren't enough physical resources to pay back the financial claims. And then there's deflation and lots of bankruptcies and what I view as kind of a 30% haircut across the world in terms of income.

Nate Hagens (06:24):

So if you think about what that might mean to you, just think about you get a 30% pay cut. Now, of course, there's all kinds of complexity that no one can envision or predict, but it's that sort of an urgency, and it's that sort of a magnitude that we're looking at a 30% drop in the size of the economies in the coming decade. I know that sounds shocking, but we have continually kicked cans to forestall that moment for the last 30 or 40 years, and there is a bill coming due.

Lizzy (07:03):

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So in regards to energy and education, what do you think that we need to be doing to better educate people about energy, and maybe what do you wish you had learned about energy when you were younger?

Nate Hagens (07:16):

I think to educate the general public about peak oil and oil depletion and carbon emissions and the decline rates is pretty difficult. It's complex and it's threatening and it's abstract. There's maths. I think energy appreciation is a first step. Look around your house. Look around your daily life. How much energy did you use? Did you ever think about you, as an average American, are using 100 times more energy than your body needs in terms of hamburgers or ramen noodles?

Nate Hagens (07:58):

Just pause and appreciate the largess that we get from burning these fossil hydrocarbons that we just take for granted. All we think about is the utility bill or the credit card we have to fill up the gas tank with. But imagine you and your buddies driving your car from Minnesota to North Dakota until your car runs out of gas because you want to go see the Black Hills or Mount Rushmore or something like that. But then pushing your car all the way back without the gasoline would take you weeks.

Nate Hagens (08:34):

We never think about that. We're living like kings and queens of old in material throughput, and we're kind of miserable. I mean most people just want more, and they don't value what the energy does for them. As far as what I wish I would have learned, I wish our entire society would be ecologically literate or eco-lit, which includes energy at a young age because I think then we would make better decisions not only culturally, but as individuals, what we do with our time and how we spend our time.

Lizzy (09:12):

This is another question from a listener. Is it accurate to say that peak oil is equal to peak economic growth?

Nate Hagens (09:20):

Well, I would say no, at least not necessarily. Well, peak oil happened probably, with over 90% likelihood, in 2018 in October. So now we're in 2022 and we've still not pierced that high, but we have pierced a new economic growth high and a new emissions high, slightly. That's partially because there's some fuel switching and partially because we added more debt and partially because we're benefiting from the embodied energy that was built using oil in the prior decades.

Nate Hagens (10:03):

But I think from a longer term perspective, yes. I think peak oil, a lot of people, especially in the electric car industry, are talking about oil peaking because we stop demand for it, that oil demand will decrease. I think that's really a flawed way of looking at things because oil has 6,000 products from a

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barrel of oil, and gasoline for cars is just one of them. But what they don't talk about is when oil demand peaks, which I don't believe is going to happen.

Nate Hagens (10:37):

For instance, China is now the biggest oil importer in the world, bigger than the United States even though we're the biggest consumer. Their demand for oil is not going to go down much unless they're in a depression. So what's happening now is the demand for oil will continue to be very high while the supply is going to start to decline. We might make a new peak in 2023 or 2024 if the central banks do some coordinated bazookas and pull more resources from the future.

Nate Hagens (11:11):

But I'm pretty confident 2018 will be the peak, which means that in the longer run as oil declines, we have all these hundreds of billions of workers that are helping the global economy are gradually retiring and, therefore, I think from a decadal standpoint, the peak in economic growth for humans will coincide with the peak in oil production. By the way, the peak in oil production growth, it used to grow at 6 or 7% a year and that stopped in the early 1970s.

Nate Hagens (11:50):

By the way, the early 1970s is when the growth rate of economic GDP peaked for the world. We've had declining growth in economic output for 50 years. We're still growing, but we're growing at a slower pace.

Lizzy (12:11):

So shifting gears, you've recently learned a lot about technology, such as social media algorithms, AI, cryptocurrencies. How have these things changed your perspective on the whole system and particularly within your own podcast?

Nate Hagens (12:26):

Right. So listeners of this show know that I've had conversations with Daniel Schmachtenberger, who's a technology existential risk expert, and Tristan Harris, who is a social media polarization expert, and Aza Raskin, who's an artificial intelligence expert. Broadly, it's interesting when these people and others meet. I was just at a conference with some of them last week. It's like when we meet, we constrain each other's stories.

Nate Hagens (13:05):

So my story about energy depletion and a financial recalibration add an additional constraint to the things that they're thinking about on what society needs to do. But their story, in turn, constrains my view of what is possible in society. If the algorithms are unrelated to our intention, skewing the discourse for extreme views and novelty and adamant responses to things and those things get upvoted, the content in this podcast, which is relevant in the next five to 10 years for our society, never actually has a foothold.

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Nate Hagens (13:59):

It can't because it will never be upvoted because it's complex. It's threatening. It's in the future. It's not popular. So I think what I've learned is the polarization and the algorithms in social media make it very difficult to have a cultural discourse about the things that really matter because the algorithms are distracting us with petty arguments about things on the fringes, rather than the core aspects of energy ecology and the social discourse.

Lizzy (14:34):

You talk about renewables some in your videos, but you haven't extensively talked about nuclear energy. Do you have any thoughts on that?

Nate Hagens (14:43):

Yeah. Nuclear energy is one of those polarizing topics. Either people are really for it or really against it. I'm agnostic on the longer term synthesis. But the reason that I don't think it's a sanguine variable that's going to change our reality is, first of all, only 20% of global energy use or 21% is electric, and nuclear creates electricity. So there's a lot of aspects of our society that could be shifted over time to electric.

Nate Hagens (15:30):

But right now, nuclear and solar and wind provide electricity, not powering global transportation fleets and things like that. So that's number one. Number two is nuclear, as solar and wind, is kind of flat. You turn it on or you turn it off. So human demand has kind of a sine curve during the middle of the day and the middle of the night. So nuclear, just like solar and wind, is best when it's paired with combined cycle natural gas, where you can turn on and off.

Nate Hagens (16:06):

Now, that's changing a little bit, but it's a match that is best fit with natural gas, which is another reason that many European countries are struggling right now. They have nuclear, but they need natural gas to offset. Another is that it takes 10 years to build a nuclear plant and maybe faster if it's on a crash course. What we face is an economic recalibration of our ability to maintain and service our financial claims with the underlying GDP.

Nate Hagens (16:45):

We are doubling our debt every eight and a half years, and we are doubling our GDP every 25 to 30 years, which is the income stream needed to repay the debt. This math doesn't work. So whether nuclear works in the next 50 to 100 years or not, it's not going to stop this financial recalibration in the next decade. We need something other than the market to plan to have a massive scale, a build out of nuclear. Plus, Simon Michaux on our podcast said that we don't have enough uranium beyond the next 70 or 80 years.

Nate Hagens (17:27):

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Thorium is also a possibility, but there does seem to be a religion around nuclear, both pro and con. Over time, I'll have some nuclear experts from both sides on the show. But that's my quick response.

Lizzy (17:44):

On the note of carbon though, you don't often extensively address climate change in your work and sometimes people question why you don't talk about it as much. Do you have any reasons for that or thoughts on climate change that you want to share?

Nate Hagens (17:59):

First of all, we're all on this planet for a short time, on this amazing blue-green planet that has produced life for billions of years. So after I envision that I'm no longer on the planet, the thing that I care the most about is the biosphere, the ecosphere, the oceans, and the ecosystems that support life for the millions of other species that we share the planet with. That is what has been driven me. That was why I left Wall Street is to carve and help steer a better future for the lifeforms and productive ecosystems on the planet.

Nate Hagens (18:40):

Having said that, I do not think that climate change is in the top five risks that our society is going to have to face for most people listening to this podcast in the next five years. There are millions of people working on climate change and not so many people working on the systemic view of our situation. So I am trying to move the needle on the things that people don't understand. Climate change is not the problem.

Nate Hagens (19:10):

Climate change is a symptom of the larger problem, which is overshoot of a social species finding a bolus of fossil sunlight and throwing a two-century party. So we have to look at the underlying system to look at the leverage points, and I don't think that people maybe in our country and in Germany and in the rich industrialized West, people have the luxury to care about climate change. I think if you look at surveys around the world, it's pretty far down the priority list of people. So I just don't think we're going to optimize and prioritize it culturally.

Nate Hagens (19:55):

Let me say another thing though. From when climate started to be in the news a lot and prioritized, the IPCC has changed their cluster of forecasts. I've been saying this for over a decade because I knew that the IPCC was energy-blind and that the Representative Concentration Pathways that showed the forcing per square meter were based on econometric inputs and not on bio-physically plausible input.

Nate Hagens (20:32):

So recently we had the IPCC sixth assessment. It's confusing, but there's improvements made to the RCP SSP thing called current policies. There's one called the moderate action scenario, which I think is the most realistic, akin to RCP 4.5. What that states is the forecast is if we have emissions at today's level

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constant out to 2070 and then a drop of 50%, that that would result in two and a half degrees Celsius by the year 2100. So the current policy scenario has us capping at three and a half degrees, but the moderate action caps at two to two and a half degrees.

Nate Hagens (21:22):

So I believe this is not going to happen. There is no way we have the fossil fuels, especially the oil, out to 2070. So even that, I think, is an aggressive energy availability standpoint. This is from the IPCC. I'm not a climate scientist. I'm a systems scientist. But they're saying that that's two to two and a half degrees Celsius. That's in contrast to a lot of scenarios 10 years ago from the IPCC that were talking about three and a half to eight degrees Celsius.

Nate Hagens (22:00):

A lot of books, *The Uninhabitable Earth*, were referencing this RCP 8.5 scenario, where we would warm by eight degrees Celsius. Having said all that, two to two and a half degrees Celsius could be extremely bad, and that itself could trigger feedbacks that would result in higher ultimate temperatures. Of course, the problem with all these scenarios is they stop at 2100, and yet the climate doesn't stop at 2100. So from a long-term caring about ecosystems and other species, 2300, 2500, the year 3000 matters.

Nate Hagens (22:43):

But I think the Armageddon scenarios, according to the IPCC, are much lower likelihood than the coupling between two and three degrees. Now, two degrees is infinitely better than 2.2 degrees. So these things are all incremental and important. Of course, on the flip side, the IPCC and other climate models probably, well, definitely undervalue and under appreciate the biological positive feedbacks. One that's not even in the models at all is if we have a declining economy, what happens to the forest sinks?

Nate Hagens (23:26):

The Amazon and British Columbia are already becoming carbon sources instead of sinks because of the burning and the beetle die off and things like that. But what happens if we run out of fuel and have to chop down trees for wood, which happened in the 2008 financial crisis in Greece? They had to hire armed guards in the Greek army to defend people from going to the north of Greece to chop down trees. So all sorts of those things aren't in there.

Nate Hagens (23:56):

I don't think anyone knows. I think it's clear that we've already passed some tipping points. We're already above one and a half degrees. But I think the super Armageddon scenarios are becoming less likely because of what's happening to the economy. I choose to deeply care about the natural world. My core belief is we have to avoid a collapse scenario in the human economy, which would result in nuclear war, nuclear winter, and just a decimation of nature.

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Nate Hagens (24:31):

So I'm rooting for a cultural bend not break scenario, which will be better for climate, and it's going to happen anyways. So that was a very long-winded answer to your question.

Lizzy (24:46):

So on a related note, another question from one of your listeners. Can't we just wait until global oil production peaks and then change our lifestyles?

Nate Hagens (24:56):

Well, that is exactly what's going to happen. That is my hope on this podcast is if people understand human behavior, we will not do anything major ahead of time to prepare for what's coming. If you really understand that, if you really intuit that, it gives you a little bit of agency and a kick in the ass to do things for yourself in your community, in your city, in your region ahead of time because we won't get the signals until the signals are upon us.

Nate Hagens (25:31):

It would be great if we had the ability to say, "In 2030 gasoline is going to be \$10 a gallon," and have all of our industry and our businesses plan for that. But of course, what would happen is in 2029, gas would be \$3 a gallon or \$4 a gallon, and the politicians would say, "Well, I know we promised to have \$10 a gallon, but we're not going to do that because that's going to be too painful."

Nate Hagens (25:59):

But if we had an extended time horizon where we knew something would change in the future, we would innovate and create new things, new ways of dealing with that. So I think can't we just wait until global oil production peaks and then change our lifestyles? Yes, that is exactly what's going to happen.

Lizzy (26:23):

Do you think that gas prices will come back down from where they are right now in July of 2022?

Nate Hagens (26:35):

There's three things that are going on. Number one is there's a global decline rate of around 6½ to 7%. So all the existing oil that's been drilled in the world keeps cranking out oil, but the amount it's cranking up is dropping by 6 or 7% a year. On top of that, we have to drill new wells and find new fields, and we add that new production onto the stuff that's declining. If you add that all together, over time, you have to run faster and faster to keep the same amount going, and we will lose that race.

Nate Hagens (27:11):

So eventually, that decline rate will start to ... The net between the two will mean lower production. Lower production means higher prices unless we have credit, which is the magic wand of central banks and commercial banks, creating more money that allows people to afford more things, which allows us



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to produce things we otherwise wouldn't be able to. That creates a false signal for oil companies to drill more for new upstream investment. That could keep oil prices going and oil production going.

Nate Hagens (27:56):

The other thing that's relevant is people's ability to afford. If people don't have savings and if their income is lower or if we're in a recession, then even if oil production is declining, our affordability to pay for it is declining faster or steeper. And then we have a price decline. So all I know is oil production is going to be declining in coming decades, but I also know that our ability to have the magic wand of credit is not going to be as available as it has been these last 50 years.

Nate Hagens (28:32):

So I expect we will have higher highs and higher lows in the price of oil. But since we have this system where we can create digits out of thin air, we have monetary claims on underlying reality that are orders of magnitude more than the actual reality. When that happens, we have these giant swings where last year, or now two years ago now, oil got to negative \$30 a barrel, some crazy thing like that. So I think the financial gyrations will be high.

Nate Hagens (29:04):

I do expect a recession later this year, which means that oil prices will go down, but probably not down by that much because China and other countries really need the additional oil because oil is the pixie dust that powers the global system. So I don't look at the short-term forecast of oil, but I would guess that oil will go down to 80 or \$90 or something like that. And then if there's any crisis, if there's any acceleration in Russia, Ukraine, or if there's something going on in Iran or Iraq, then we go to \$200 a barrel and up.

Nate Hagens (29:44):

That would crush the economy not only because people paying for the gas at the pump, but because oil is needed for all aspects of the supply chain. I think Biden administration had a task force saying, "What would we do with \$200 oil? How would we respond?" What they're doing right now is just ridiculous. They're drawing down the strategic petroleum reserve to 40-year lows just because we want to save a little bit of political will to give people cheap gas for the summer.

Nate Hagens (30:17):

Those things are meant for emergencies, and emergencies are very possible in the coming decade with respect to oil. We still are producing 11 million barrels of our 20 that we consume in the United States. But that won't always be the case because our oil, this is the source rock. This is the shale. That's nothing left after that. We should be conserving this for future decades and generations, but we're just doing a Disneyland, Vegas, all you can eat smorgasbord and bitching when the pizza is out.

Lizzy (30:56):

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Throughout your work, you talk a lot about reality-blind and energy-blind. What are some of your blind spots?

Nate Hagens (31:03):

Humans, by definition, have a list of cognitive biases as long as my arm. We studied that in the class, so many different cognitive biases, confirmation bias, motivated reasoning, bystander effect, authority bias, all those things. So seeing reality is a learned thing. All I know for sure is that all humans have giant blind spots. I am human, therefore, I have giant blind spots. But by definition, I don't know what they are.

Nate Hagens (31:45):

So I think it's maybe better to ask someone else what my blind spots are. Clearly, I have looked at this synthesis on how fossil energy underpins our society on the net energy matters, not the gross, on money as a claim on biophysical reality, on humans are optimal foragers in the same way of our biological heritage. We're part of a energy-seeking system. So these things I've looked at over and over. So I really don't think I have large blind spots there. Plus, I have a network of people that I do interaction with, and we debate with each other.

Nate Hagens (32:31):

On that, I could be off base a little bit on what renewables could do or how technological productivity and efficiency might boost our economic growth for a little bit longer. Those are things that aren't so much blind spots as they are error bands in my projections, but I'm sure I have some big blind spots.

Lizzy (32:54):

So after hearing these podcasts, many people are looking for some direction for what to do. What sorts of recommendations do you have?

Nate Hagens (33:04):

10 years ago, eight years ago, I stopped speaking about these things because I was getting really good at talking about the problem, and then everyone have a good night. I was like, "I'm not helping people." So now when I speak, I try and leave a third of the time for a framework of responses. It's hard to give universal advice because everyone is different. Some people really just care about their own survival, like a prepper, and some people care about their family and others about their community and others about their nation and others about the world and our culture and others about other generations, intergenerational equity.

Nate Hagens (33:53):

A lot of people care about the natural world who don't have a voice in what we're doing. Our colleague, DJ White, just cares about the life support systems for cetaceans. He has many friends who are cetaceans. He cares less about the human endeavor. So when you give someone advice, you have to, first of all, what do they care about? Second of all, what is their personal situation? Are they a

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stockbroker in Chicago that wants to retire? Or are they a local farmer in Nigeria or Cameroon or a renewable energy employee in Scandinavia or something? It depends where people are and their means.

Nate Hagens (34:40):

But having said that, I think there's three ... First of all, I no longer like to talk about solutions because I think solutions implies that we face a discrete problem. That's just here's how we solve it. I think what we face is a multivariate predicament that has viable responses to it, but not solutions, per se. The framework that I'm kind of arriving at and will be writing and maybe making some videos on is a triangle that has three faces.

Nate Hagens (35:21):

One face is the global situation. What do we need to do as a global culture? We're going to probably need to change our aspirations away from just purely GDP. We're going to have to change our signals, which is our prices that shape people's behavior, for instance, putting a tax on nonrenewable energy, potentially not only nonrenewable energy, but all nonrenewable inputs, and we're going to have to change our education system and just our ways of interacting.

Nate Hagens (35:57):

The second triangle would be community. What do we do in the cities and villages and communities where we live? The very first thing there is we have to build our social networks. Right now, we're building our social networks with characters on Netflix shows. But the reality is that we have a Game of Thrones without the dragons in real time coming to our country in the not too distant future. Let's hope it's not an Ozark sort of situation.

Nate Hagens (36:31):

We have to build our social capital. We have to extend our networks on a superficial level, just meet people around where you live and become friendly with them. We also have to build very intense relationships with small groups of people that will be our allies and our networks and our colleagues during the great simplification. So on the community level, there's building networks. There are changing infrastructure, and there's scenario planning. How is Topeka, Kansas, or Bend, Oregon, or Minneapolis going to respond to the things coming ahead?

Nate Hagens (37:10):

If we emotionally and intellectually process them with others ahead of time, then even if there's no discrete solution that comes out of that, there's an experience that you're sharing with other local people that will be beneficial in the future. And then the third triangle, which arguably for the people listening to this show, I think, is the most important. We did the last 15 minutes of this year's Earth Day talk and other years' Earth Day talks, we've talked about it as well, is be the best person you can be headed into this era.

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Nate Hagens (37:45):

That triangle we had, with your help, coping, thriving, and engaging ways to think about a sharpening the sword with you being the sword, meditation, exercise, trying to minimize social media and technology, generating skills. The challenge for me is I find it hypocritical to tell people what to do when I can't take my own advice and do some of those things myself. The things that I should be doing to prepare for the future, I'll be honest, Lizzy, I don't have time to do those things because I'm busy with this podcast and all of our work at Energy and Our Future.

Nate Hagens (38:35):

Just like a psychologist or something, I can give good advice. I'm less good at taking my own advice. But I think changing who you are and your expectations and being the best human being you can be headed into this era is a really central part of the recommendations I would give to people.

Lizzy (38:57):

So what is your favorite or perhaps most interesting thing that you've learned since starting these podcasts?

Nate Hagens (39:05):

I've learned a lot. By definition, since I'm the host of this podcast, I've become a better listener. I don't want to tell my guests what I think. I want to learn what they have to say and their area of expertise. I've learned a lot about technology. I think I've been really focused on energy and materials and climate and human behavior. I've learned about how technology combines with energy and materials, and that's been very interesting.

Nate Hagens (39:36):

I've learned that everyone has something different that they care about and are expert on, and it makes it really difficult to arrive at a joint agreement on things. That is something that I'm quite concerned about because even in my own group of my Sasquatch Jedi group of 40 systems ecologists who understand energy cold, and climate change, and yet we agree on so little else. One thing I've learned or I've become aware of that I'm not happy about is for the last almost 20 years, Lizzy, almost since you were one year old, I've been evangelizing on this story to some extent.

Nate Hagens (40:29):

For the longest time, I've had a chip on my shoulder that people don't understand this risk. They think that the markets and that economic growth will continue for centuries and that technology will solve it and that we're going to populate outer space and that I'm a Chicken little. So I've got a chip on my shoulder that I'm trying to restate the core functioning system of how humans interact with natural resources to give us the emotional states of our ancestors plus waste.

Nate Hagens (41:08):

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I've got this defense mechanism that that is the story that I should be telling. But what I've learned, and I was surprised at, is that most of the negative feedback I've gotten on our recent movie, The Great Simplification full movie, and on the podcast is that I'm naive and things are much darker and it's too late and we're screwed. There's a lot more people in that camp than there are in the markets and the economy will be fine. We will always invent our way out of this.

Nate Hagens (41:43):

So I find myself now in an odd position of trying to tell the nihilist camp about more hopeful, benign pathways than I find myself telling the economic growth camp that we're near the end of the middle and we're near the beginning of the end of economic growth. So I thought that was surprising to me in the last six months.

Lizzy (42:15):

What are you trying to promote with this podcast? What is the main message you're trying to get across?

Nate Hagens (42:22):

It wasn't that long ago that we didn't have a podcast. I was like, "Let's just start a podcast because I know a lot of smart people. I'm kind of a goofy, gregarious, golden retriever Sasquatch, and I could make the things interesting." I didn't really have a plan other than I knew Dennis Meadows and Paul Ehrlich and Joe Tainter and Josh Farley and these people. I think I don't want to be popular because I don't expect that the things I'm going to be saying are popular.

Nate Hagens (42:58):

I want to be a portal where people who are feeling these things and becoming aware of these facts have a place to go where we can have an authentic conversation about our reality without being prescriptive because I don't know what to do. I have a framework for what to do, but I don't really know. There's too many unknowns of what's going to happen in the future to be overly prescriptive anyways.

Nate Hagens (43:27):

I want to have a place where people can not feel so alone and learn about the dark underbelly of what kicking the can the last 50 years in our society has created and educate but also inspire people to roll up their sleeves and play a role in their own communities towards making the future better than the default would be. I don't have plans beyond that. I would love to have some materials and a plan so that there could be scout teams in every city across our nation that watch some videos and have some conversation starters about what they will do in the coming decade when all this starts to unfold and just generate the social capital that engenders.

Nate Hagens (44:27):

If I could influence that and, at the same time, kind of reach both the head and the heart so that we have an understanding of what's at stake and to propel things of value through the bottlenecks of the

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21st century, not only knowledge but morals and values and species and the collective learning of our culture. We just need a lot more people on the game board that we are part of and not the one that the media and economists and Elon Musk are telling us.

Nate Hagens (45:09):

If I could do anything, it would be to grow that movement and if we had more resources and expertise to scale that to some sort of movement.

Lizzy (45:20):

Let's shift into the last questions that you ask all of your guests at the end of your podcast to hear your answers, the first one being, what advice would you give to young people today?

Nate Hagens (45:34):

This is a marathon, not a sprint, life is. The future is probably going to be darker than our media and the average person expects, but probably brighter than a lot of us fear. You have to take note of the things that are most important to you and bring you joy and passion, time with your dogs, time in nature, time with your friends, reading, playing music, all those things. Make sure that you spend time on the things that really bring you joy, but also periodically imagine a lower energy and material throughput future.

Nate Hagens (46:20):

Don't necessarily create a bug out pack for that, but just try and change your definition of your net worth. Buddhist economics is assets over desires. You can increase your assets or you can reduce your desires. I think after basic needs are met, the best things in life are free. Start having that conversation at a young age. We have a lot more recommendations at the end of our Earth Day talk. With your help, maybe we can develop a wider profile of recommendations for young people.

Lizzy (47:02):

Next one is what do you care about most in the world?

Nate Hagens (47:06):

Well, you know the answer to that. I care about other species, the natural world of this Earth, having some sort of a stable future so that 500 years from now, 5,000 years from now, 500,000 years from now, there are elephants and jaguars and platypuses and insects and bees and monarchs and cool oxygenated waters in the ocean. I don't know exactly how to enable that. But in my work, I would like to steer that towards being a possible future. In the near term, I care about holding the stability of human systems together and avoiding some sort of Mad Max scenario.

Lizzy (47:51):

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If you were a benevolent dictator or had one wish to make anything happen, what is the first change that you would make?

Nate Hagens (47:59):

This is a really difficult question because by asking if you were a benevolent dictator and there were no social repercussions, you're setting up someone to get in trouble with that answer because we are so focused on the social repercussions of what we say. I go to a lot of these conferences where there's a lot of people like me that have ideas and are experts on energy or climate change and that what ends up happening is people self-organize around the silver back women or men in the room that have the highest status or a billionaire there, a funder or something.

Nate Hagens (48:43):

What they say is couched by the people around them and how the social response is. We make decisions using social sorting mechanisms. I would love at these conferences if people could put anonymous questions and answers ahead of time, and those could be read out loud without any recourse to who said it, and that way we would tell a lot more truths. So with that in mind, one thing I would do is for all the big organizations working on issues pertaining to the future that have 1,000 employees or 10,000 employees, and they have a hundred million dollar endowment and then there's this hierarchy and structure.

Nate Hagens (49:29):

I would break that into hundreds of groups of five people and break the money out and give them each the groups of their share because small groups of people don't run into this social hierarchy problem as much because a band of three, four, five, six, seven humans can be super creative and super flexible and bond together in a way that the hierarchy doesn't allow. So one thing I would do would be to create a institutional requirement for small groups instead of a large group.

Nate Hagens (50:04):

Another thing I would do would be to extend the time horizon of our activities. Instead of quarterly earnings or yearly decisions, I would extend some of our institutional decisions to five years or 10 years or 20 years. That kind of flies in the face of the maximum power principle. But we could institutionally extend the horizon of our decisions, which would, by definition, take into account some of the externalities that we continue to can kick.

Lizzy (50:37):

What worries you the most in the world?

Nate Hagens (50:40):

What worries me most in the world is ... Nate fills in the blank probably 30 different times when I'm asked this. But what's on the top of my mind at this moment is I think we underestimate the chances of a nuclear escalation and what's happening right now with NATO and Poland and Lithuania and

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Kaliningrad. I just don't see how our leadership doesn't see that poking a bear that has a nuclear arsenal, not only Russia, but China in the not too distant future, I just don't see how we make it through the next 10 or 20 years without a nuclear exchange.

Nate Hagens (51:21):

I'm not an expert on it. We've had some podcasts with Chuck Watson who is an expert on it. That worries me a lot. The other thing that worries me is the polarization and the fact that we can't have discussions with living, breathing red-blooded Americans who care about the Constitution and clean water and education and other species in our ecosystems and a future for their grandchildren. All those central things, we can't even talk about because we're upset about Roe v. Wade or some fake news or whatever. We're just being totally distracted by social media and unable to have a discourse. That worries me.

Lizzy (52:05):

On the flip side, what gives you the most hope?

Nate Hagens (52:08):

You give me hope, Lizzy. You and a lot of my students give me hope because they take this all onboard and understand it and seem to roll with it. I think we dramatically underestimate young people, teenagers, and grade schoolers. I think we need to really lean on and engage and breathe life into youth as a cultural response. That gives me hope. Also, what gives me a little bit of hope is seeing how fanatically certain about the future so many other smart people are.

Nate Hagens (52:44):

I can see the holes in their argument. So I think that paradoxically gives me hope because I think a lot of certainty about how terrible the future's going to be is probably misguided. And then I see hope every day when I talk to people and they're reasonable and they're rational and they know that we don't need all this energy and stuff to be happy. I think there's going to be a lot of chaos and misery and suffering in coming decades in the world, but I've already kind of grieved for the future that most people expect.

Nate Hagens (53:23):

So I'm hopeful because I have a lower starting point and that way I'm optimistic that things will even be better than I expect, if you can call that hope.

Lizzy (53:33):

All right. Well, that's all the questions I have. Do you have any closing thoughts that you'd like to add?

Nate Hagens (53:38):



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I'm happy that we're doing the work that we're doing. We need more people to spiral this outward and meet the future halfway. Our work of this organization is to, quite simply, change the initial conditions of the future moments when these events start to manifest in real time. We're just a tiny organization, and so I just want to pass the baton to all the listeners now and in the future to take this onboard and play a role in your own lives in whatever is important to you.

Nate Hagens (54:23):

For a 21-year-old, you are a good interview host. We might have to do this again. So thank you for that.

Lizzy (54:31):

Thank you.