

## ***David Orr on What Now***

Extended interviews with accomplished thinkers, writers, artists, farmers and scientists addressing the global crisis

[KOWS RADIO OCCIDENTAL 107.3 FM LP](#)



*What Now* is hosted by Ken Rose

Every Monday from 11 am to 2 pm Pacific Time



*On February 21, 2011 Ken interviewed David Orr. David is the Paul Sears Distinguished Professor of Environmental Studies and Politics at Oberlin College. His latest book "Down To The Wire: Confronting Climate Collapse" is "a sober and eloquent assessment of climate destabilization and an urgent call to action." Below is the written transcript of the interview.*

KR: On the phone from Oberlin College in Oberlin, Ohio David W. Orr. Good afternoon.

DO: Hey Ken. Good afternoon to you.

KR: Thanks for coming on the show.

DO: Well, thanks for having me.

KR: David Orr is the Paul Sears Distinguished Professor of Environmental Studies and Politics [at Oberlin College]. Also, James Marsh Professor at large at the University of Vermont. He has a Ph.D. in International Relations from the University of Pennsylvania. He has two sons, three grandchildren and a wonderful wife. The author of five books at least, the latest of which "Down To The Wire: Confronting Climate Collapse" is one of the most important books currently in our possession. Best known for his pioneering work on environmental literacy and higher education and his recent work on ecological design. Raised funds and spearheaded the effort to design and build a \$7.2 million Environmental Studies Center at Oberlin College, a building described by the New York Times as "the most remarkable of a new generation of college buildings" and by the U.S. Department of Energy as "one of the thirty milestone buildings of the twentieth century." He has won numerous awards, accolades. He has several honorary doctorates. Distinguished scholar in residence at the University of Washington, Ball State and Westminster College and on and on and on. Contributing Editor of

Conservation Biology, Dr. Orr is one of our premier voices informing us and alerting us to the reality in which we are enmeshed. So, let's see. I want to essentially work our way through what you're telling us through this book. I urge all our listeners to get a copy of "Down To The Wire" and read it carefully and pass it around to your friends and neighbors and family. Where should we begin, Dr. Orr? Would you care to make an opening statement or I have one or two to make myself.

DO: No, I'll tell you. Let's just get right into the questions. I appreciate the time on the program and your listeners on the line.

Kr: Okay. The first question is have we lost control of climate?

DO: Well, I don't think anybody knows for certain. Climate operates over long periods of time. It operates with lots of fast and slow drivers. The slow drivers have to do with things like the oceans and so forth. The oceans have absorbed a good bit more of the heat that's been released than the atmosphere has, for example. We're now at about 392 parts per million (ppm) carbon dioxide in the atmosphere. We've not been where we are ever before and there's no short answer to that question other than saying we don't know for certain, but it would be prudent to assume that we're close to losing control and move with a sense of wartime urgency to do all the things that we know how to do to reduce carbon emissions that would also benefit the economy. Even if climate were not an issue at all, it would be beneficial to create some jobs and business and profitability.

KR: I'm sure you would agree that one of the crucial aspects for our prospects for any sort of human future is that the general public become significantly more aware of the reality, the actual reality, of our circumstance.

DO: Absolutely. I'm no public relations expert, but the way the public needs to be informed. It's a delicate situation because if you tell the public only the dark side of the picture, people will do nothing or they'll simply go into denial and so somehow we have to tread a very delicate line of being truthful about what lies ahead and constructive and move people toward a vision of what we *can* do right now. I think that if the message isn't strong and clear, people will not get the sense of urgency that we need to have to forestall or avoid the worst of what could lie ahead.

KR: Many people like yourself who are public figures do have to be especially careful in choosing words and in the tenor and elaboration of the communication, but someone like myself who is a layman, I can be a little more alarmist, not because I feel that it's a matter of being sensational but because I feel genuinely alarmed at the lassitude and the inadequacy as yet of our response.

DO: For all this my response to that is simply to say that we've got to be truthful about it but also constructive, as constructive as the truth permits us to be. The truth of the matter is that we're where we have never been before in terms of species. We're heating the planet. We've already warmed it eight tenths of a degree Centigrade. That

doesn't sound like much, but that is destabilizing lots of things. Arctic sea ice in January was the lowest ever recorded since satellites were able to photograph it and that's bad news because that kicks in what climate scientists refer to as positive feedbacks. As sea ice disappears, that white surface goes away and that was reflecting sunlight back into space. The dark surface of seawater now absorbs sunlight and therefore heat. So I think the issue here is how do you tell this to the public in a way that is simply truthful. It's not alarmist, nor is it pollyannish. It's just truthful. And then get constructive. What do we do here, now in this place? How do we link up with others, in the State of California, in the U.S. and around the world to do what we *know* how to do? This is not an unsolvable issue in front of us.

KR: The classic story of crying wolf, the lesson being that you don't cry wolf under most circumstances, but when the wolf is at the door, it is time to cry wolf and it is time to sound the alarm. Many of us, millions of us hundreds of millions of us know full well that we are in an emergency situation not least of which is in our consciousness and our awareness, so it behooves us to educate ourselves all the more. Your book, frankly, changed my life because it disabused me of the notions of, that we have a serious problem and we're working on it and government and industry and all the major institutions of our culture are aware of it and working on it we're going to be alright as long as we pay attention and get to work. After reading the book all of that seems inadequate. I don't think the reality, the situation to the general public with the kind of urgency that's staring us in the face. That's just my point of view.

DO: Well, I think that's right. I think that we've not somehow conveyed the reality to the public but in all fairness to people whose job it is to communicate this including you and me, it's unprecedented. It's a global issue. It is somewhat distant. The worst of climate destabilization is not on us yet. It invites all kinds of procrastination that has been politicized and the news media has not done its part to educate the public in any way, shape or form. The news media has been, quite frankly, derelict on the issue, and so the public is confused about it and the same people who spend lots of money and effort to deny that cigarette smoking was harmful to health have stepped in and are denying that climate change is in fact real in opposition to virtually all of the published science on the issue.

KR: You inform us that politics and governance is absolutely essential and primary if we're going to bring the momentum of our understanding and action up to speed. You say that "adoption of a robust energy policy is the fastest and cheapest way to improve the economy, environment, health and equity and increase security. It is the keystone issue, not just another stone in the arch." So I would like it if you would speak to us somewhat about governance.

DO: [Laughs] Well, it's a big subject. Lots of people will look at the issue and say it's merely a technological issue. If we just had better windmills and compact fluorescent light bulbs and that kind of thing, that that's all we need to do. It certainly has a technological side to it. I've made no argument at all and in fact every argument for better technology.

Some people believe it's just an economic issue. If we get the prices right, particularly around carbon in this case, that that will take care of it and I believe in better and more accurate pricing, but after you've improved the technology or actually before you improve the technology and the pricing system, you have to make certain collective decisions and these are what we do in the public sector. The market is where you and I go and we buy things that are the cheapest we can get at the best quality we can afford, but the public sector where we vote and participate in the public life, that's where we make decisions that have to do with how we price and what kind of things enter what kind of market. So governance, when people say "let's get government off our back" I think that's a complete error. You can't get government off your back. You will have government one way or the other whether it's delivered to you by corporations or by elected officials in Washington, but you *will* be governed. There's not an option not to. I think the great lie of the Tea Party movement has been that you can simply dismantle government and have good outcomes, but government is the thing that stands between us and utter ruin relative to climate change and lots of other issues. When the worst hits and you have a major storm hit California or a drought, you don't typically call 1-800-Walmart. You are going to call government and you hope somebody picks up the phone.

KR: Yeah. The government and media are still playing the card that we are going to have a recovery or that we're going to resume some sort of growth and many of us know better than that. Many of us are coming rapidly to understand that growth is not going to continue. We're on a finite planet and the increasing population and drain on resources makes growth a thing of the past at least for many hundreds of years to come. We're essentially entering a dramatic new era of human presence on earth which is an era of substantial contraction in the way we live, in our expenditures of energy and that you quote in the book Howard and Elisabeth Odum as saying that one of our imperatives is to craft a "prosperous way down" which is a very intriguing statement. I wonder if you could speak to that.

DO: Well, growth is a complicated, controversial subject. We've come through an era where we've been addicted to it and it hasn't delivered in lots of ways what it was supposed to have delivered. It hasn't delivered equity. There are two billion desperately poor people on the planet even though we've been through this period of *enormous* creation of economic wealth. It hasn't delivered happiness. For the most part all the studies we have, and there are quite a number now on just how happy people feel. Happiness kind of levels out at a fairly modest income level. After the basics are met, the things that make you happy are your friends, good books, baseball and whatever it might be, but it isn't more money.

Growth hasn't delivered in terms of sustainability because the way we've gone about it can't be sustained very long into the future. No one can realistically run the film fast forward of the economic growth of the past fifty or seventy five years and have a decent future very far out into the future. And yet on the other side, there are places in the world that are desperately poor where growth needs to take place, where hospitals

need to be built and roads and sewers and electric facilities and better housing and so forth. So we know that there places on the planet where growth needs to taper down and places where it needs to ramp up.

The kind of things that we call growth, it would be far better as lots of people have pointed out for many years. Herman Daly, the great economist at the University of Maryland, has written for forty years about the need for what he calls steady state development and steady state is simply where you reach a balance point. John Stuart Mill back, way back in the nineteenth century had written about the same thing, but can we create an economy that is powered entirely by sunlight, efficiency and wind that produces no waste product, that provides fairly and decently for everybody and can be sustained within the limits of the natural world. That's the challenge before us and I think the answer to that in a purely technical sense, is yes we can do that. We know enough now to make that kind of economy. The stumbling block isn't can we do it. It's *whether* we do it and that takes you very quickly into the area of politics and leadership and governance. So these things again come back to the issue of how do we make collective decisions. Will we decide to do what's necessary to do to create a long term future for our children and grandchildren and theirs or do we try to prop up and maintain the same kind of nineteenth century sort of economy that we had that, quite frankly, has no good future ahead of it.

KR: Dr. Orr, what was the Wolf Creek Statement?

DO: Well, Wolf Creek was a facility in North Georgia and in 1976 as the election of Jimmy Carter or right before Jimmy Carter was elected, he asked a few people on his staff to develop a statement on the biggest or the largest and most important environmental issue his administration would face. Cecil Phillips, who at that time was the Director of the Georgia Conservancy and I pulled together a group of people that included Amory Lovins and Dennis Hayes, the founder of Earth Day, who was about to become the head of the Solar Energy Research Institute in Boulder, Colorado. We pulled a group of people together and we identified energy as the key issue that would face the Carter administration. In fact it's been the most important issue, I think you could make a good case, the most important issue that every president since Carter has faced and has basically at this point failed. What we proposed was a severance tax on all fossil energy at the mine mouth or the well head for oil or the port of entry for imported fuel and that severance tax would be filtered through the whole economy. The price of everything using fossil energy would go up. The proceeds of the tax would in large part be recycled back to the public pro-rated inversely to income, so the poor people whose energy consumption is inflexible would get more and wealthy people would get less or nothing. It still reads pretty well as policy. We've never summoned the leadership to do what every president since actually Richard Nixon has said that we had to do and that we could do and that is achieve energy independence, equity, fairness and make the transition to a very different, a twenty-first century energy system instead of the fossil fuel world of the nineteenth and twentieth century.

KR: A little over two years ago we elected a new president and many people wept, feeling that perhaps the worst is over and that we were on our way and there's no sign that that's really materialized and there's a great sense of disappointment and perhaps even of having been betrayed, of having our hopes betrayed. Do you still hold out any hope for this administration?

DO: Well, two comments. I think from my vantage point President Obama and his advisors made one huge mistake at the start and that was not to put climate policy and energy policy which are flip sides of the same coin as the first thing they did when they took office and had they done so, climate and energy bill, had it been developed by the administration, pushed through Congress, again, with a sense of wartime urgency, would have provided, I think, another 50% addition to the stimulus funding that turned out to be about half give or take of what most economists of any reputation believed was necessary and the stimulus was just too small. Had an energy/climate bill passed, I think it would have helped augment the stimulus funding, would have helped the economy, would have placed the health of the planet before the health of the individuals and I think would have been beneficial in all kinds of ways. I think it would have helped to, not only have been necessary to stem climate destabilization but also show international leadership, help get the economy moving. It would have given Obama, I think, an early success before sides hardened so bitterly around a healthcare bill which was eventually of course passed but took a huge toll on people's sense of affability and conviviality. It was a bloodbath to get that bill through.

KR: You write in a chapter called "Hope at the End of Our Tether" that  
"Genuine leaders including those in the media must summon the people with all of their flaws to a level of extraordinary achievement appropriate to an extraordinarily dangerous time. We must ask people to be active citizens again, to know more, to think more deeply, take responsibility, participate publicly and from time to time sacrifice. We must relearn how to be creative in adversity and that as quaint as this may sound, people have done it before and it has worked."

I think that the American people still, exhausted as they are, exhausted and bewildered as they are, still have it in them. We still have it in us to respond to this if we are inspired and summoned to do so. So that's something that could perhaps happen any day. Someone could stand up and make a rousing speech that would perhaps, electrify the nation.

DO: Uh, well Ken, I would hope and I think within our system, that person has to be the president and you asked about Obama and my hope originally was, as a number of us who have gotten together to create the document called "the President's Climate Action Plan" which focused on the first one hundred days of the next U.S. administration be it Democrat or Republican and we had hoped that the President would stand up and deliver the climate equivalent of Franklin Roosevelt's Day of Infamy speech that was given right after Pearl Harbor and do a clinic for the public on climate science and explain to the public why this is a tough issue, understand it's not like any challenge we've faced before. It's global. It's permanent. It's coming at us much faster than

anybody had ever expected. The science gets progressively worse. The more that we know, the worse it appears to be and that didn't happen.

The President took a fairly passive stand. He's done some things. He changed lots of things that had to do with federal purchasing and so forth and so he has not been inactive on this, but relative to the magnitude of the challenge, he simply didn't do nearly enough. Our preference was, go to the public initially, explain what the concern is, and harness the assets of the administration to move quickly, directly and clearly on this issue. Don't wait for Congress to come up with a bill, come up with a much simpler bill than what eventually passed through the House of Representatives. Something that was transparent, clear, relatively simple, fair and around which people, Democrats and Republicans, might have rallied, but Ken, that didn't happen obviously, so what do we do now.

I think one of the issues for us now is what in the clear likelihood that there will be no climate or energy legislation passed of any...that would be adequate to the challenge, what we might do is to begin to collect people who are working on this issue all around the country in all sorts of ways. There are literally hundreds or thousands of cities and villages and towns and organizations around the United States beginning to work and working very effectively to make the transition to solar energy and energy efficiency and sustainable agriculture and so forth but beginning to pull these together into, let's say, our version of a tea party movement that would take some of this anger and anxiety and angst and redirect it to positive things. Can we figure out how to create jobs in our community by shifting to efficiency and renewable energy? Can we undergird economies now that are devastated by having to buy oil from overseas at uncertain but steadily rising prices? Can we begin to eliminate waste and rebuild economies around what my friend Bill McDonough calls "Cradle to Cradle" economies. Can we make factories that produce no waste product, but can we begin to coalesce all of this activity at the grass roots level. At the level of cities and towns and organizations and even in some cases in some regions into a national movement. What the failure at the federal level has meant is we will have to do this on our own.

KR: What was the Millennium Ecosystem Assessment Report?

DO: Well, that was a document that came out in 2005. It's published by Island Press in Washington DC. It was the largest assessment ever made by ecologists of the state of the planet and the news is not good. If the earth were a patient taken into the emergency room of a hospital and you checked the vital signs of the patient, the heartbeat and respiration rate and so forth, the vital signs of the earth are not good and they're deteriorating rapidly. We cannot have growth in almost every sector as we've had it and have a healthy planet and so if we want to grow, we have to grow in radically different ways, improving quality, not quantity. Fairness, not the kind of system we have now that produces essentially an oligarchy of very rich people running the country and running the planet but the Millennium Ecosystem Assessment Report looked at oceans and fisheries and forests and grasslands and all the ecological systems of the planet

and came out essentially with a verdict that things are trending in the wrong direction quickly.

KR: You say that “we must summon the clarity of mind necessary to separate the urgent from the merely important and identify strategic leverage points where small changes will generate large effects.” How on earth are we going to summon the clarity of mind necessary to separate the urgent from the merely important when the media ecology in this country is a seamless procession of distraction, such as the Academy Awards and the Final Four and the Super Bowl and this and that. There’s not a space in the calendar where anyone can take a deep breath and think clearly. [Chuckles] So this is really, you would think this would be a fairly not much to ask that the country just put their amusements on hold for a day and think clearly. This is a real problem.

DO: Well, you’re right and the only answer I can give is we don’t need everybody necessarily thinking clearly but we do need *enough* people thinking clearly. So this gets into people and public affairs, elected officials, thought leaders, people in the media. If I were to change one thing about the US at this point, it would be to somehow get the media focused on what really does matter. Play the role of being educator, not distracter and equip the public to understand more about what lies ahead of us and what we must do about it. I don’t know how to make that change. One thing I did propose in the book was to enforce the fair and balance provisions of the 1948 FCC act which Fox News simply mocks. People who typically listen to Fox News score considerably lower every time they’re tested on what they know about public affairs. If you get most of your information from Fox, there’s just going to be lots of gaps in what you know and there are going to be whole lot of things that you think you know that just aren’t true. The media has let us down and we don’t have a name for the crime that’s being committed but it *is* criminal and our grandchildren will see it as such. They’ll wonder what were we possibly thinking as we destabilized large parts of the earth’s systems, most notably the climate system.

KR: Well, I think in a very real way, we’re actually enslaved, but that may be another discussion for another time. Somewhere in the book there’s a quote saying “we must repair and enhance our civic culture.” Is there anything that could be said about that?

DO: Well, yes. Stepping back for just a moment, we don’t know that democracy at the end of the day will be able to make the changes necessary to preserve civilization in the time allotted. We don’t know that yet. That’s not an argument against democracy. That’s simply to say that we don’t know. So we’re undergoing a huge test about whether the society “so conceived” as Abraham Lincoln would have put it, can “long endure” in the face of its own behavior. The enemy here is us. We built a civilization powered by carbon fuels. Now we have to make a very rapid transition to something else. The good news is we know pretty much what the something else is and it’s for the most part cost effective and available. You can take off-the-shelf technology and make most of the changes we have to make *right now*, but we don’t know that we can summon the discipline and the foresight and the intelligence required to do that in a democratic framework. That’s not an argument at all for some sort of dictatorship or

anything else. It's just to say that the jury is out. We don't know that yet, but the civic life of the country in the past election we were hijacked by a group of people who seemed not to have a clue that our behavior is destabilizing the planet. The anecdotal and scientific evidence could not be more clear and so the concerns of this Tea Party movement, some of which are fine. Everybody's for reducing the deficit and all that. Nobody's for deficit, but they don't seem to take it very seriously because they're not willing to look at the tax structure and increase taxes on the people who really don't need tax breaks. The top tenth of one percent certainly does not need a tax break, but this has to do, I think, with the lack of repair and this began with Ronald Reagan, I think in 1980, telling us that government was a problem. Well, sometimes it can be but sometimes the U.S. Chamber of Commerce is a problem. Sometimes the private corporations are the problem. Sometimes it's higher education that's the problem. Any time you have organizational forms, you may have a problem. Government is something that's absolutely essential to the transition. The market cannot do it. The market *will* not do it. So we've got to have some kind of what John Kenneth Galbraith called years ago "countervailing power" to these vast and powerful and eternal corporations, some of which do not make tax payments. So we have some very large corporate actors that have last year for example paid not a nickel of federal income tax. We're in the meantime over here cutting schoolteachers and cutting programs for our children and for the poor and for the people who need help and the elderly. Yeah, we've got some repair work to do.

KR: You write that "it is long past time to separate money and politics in the same way the founders intended to separate church and state." You say that "all federal elections ought to be publically financed and the corollary is that no elected or appointed official after leaving public office should *ever* be allowed to hold a paid position with any regulated industry. If public officials face financial destitution as a result of their public service, let us pay them better but the people's business should not be peddled like beer and SUVs." Any comment on that?

DO: [Chuckles] Well, I believe that. We basically have what Will Rogers said years and years ago, "the best government money can buy" and every public official has to begin the day they're elected running for office and raising money for their next campaign. Ken, we pay for this one way or another. We pay in higher prices for various kinds of goods and services, but we pay one way or another. We might as well pay directly. Instead of under the table and behind closed doors, we ought to pay above the table and in the full light of day but it doesn't make any sense to have K Street write public policies which it effectively does now. It did it for eight years with George Bush. The Tea Party movement has taken whole chunks of legislation that have been drafted by lobbyists and so the system is corrupted through and through. There are very few people who survive without the corruption. I mean there's some awfully good people in the House and the Senate. I don't mean to tar them with one big brush, but they live and work in a system that is corrupted to the point where... I think you are hard pressed to legitimately call this a democracy. This has become an oligarchy where money tends to rule and I think we've got to throw the moneychangers out of the temple

of public policy. Let's get em out. The separation of money and state is as essential as the separation the founders placed between the church and the state.

KR: Dr. Orr, "Down To The Wire," this extraordinarily important book, you wrote it a little over two years ago, two long years ago. What are you working on now or how do you refresh your own vision from a mere two years ago.

DO: Well, for one thing is the paperback version of "Down To The Wire" comes out. I just finished writing the introduction to that. Last December I put out a collection of writings from Island Press called "Hope Is An Imperative" and that's Island Press in Washington DC. Most of my work right now is on, I'm writing two other books, but most of my work right now is on the Oberlin project. That is an effort here between the college where I teach, Oberlin College, and the city which is simply the city of Oberlin to rebuild a downtown and do it in a way that is carbon neutral and rebuilds and revitalizes the local economy to move the whole city and the college collectively to a carbon positive stance where we are not contributing to climate change, build a 20,000 acre greenbelt to resuscitate local agriculture and begin to relocalize some of our food systems and forestry products and then develop this as an educational venture that involves students from the college, public schools, a two year college nearby and a vocational school here in town. Then we want to take this model and replicate it around the country and in every way, Ken, this is not just environmental and about climate. It's not just economic and about economic development, although it is both of those things, but it's beyond that. It has to do with national security and the country, in fact, has been lulled into believing that security starts at our shores and borders and works out. That's the deployment of F-16s, battle groups and marines and so forth in various places around the earth but security also starts at those shores and borders and works in. It's an old insight that George Kennan had many years ago that the way we organize food systems and transportation and energy and economy makes us more or less secure. We're trying to start a conversation with lots of people around the country about how to pull various groups and organizations together into a national security network that includes lots of different projects, cities, neighborhoods, towns and so forth so that we begin to build a nation that is much more resilient in the face of not just climate change, but terrorism and acts of God and so forth. That's what I'm doing now.

KR: Uh huh. Your work at Oberlin is essentially the construction of a prototype model.

DO: That's right.

KR: Dr. Orr, in a chapter called "Millennial Hope" you write:

"Do we have grounds for optimism? In the near term I do not think so. We have yet to obtain full awareness of our situation, let alone what will be required of us to deal with it, but I believe as well that the dawn of awareness is close at hand. When we do settle down to work to stabilize climate, good possibilities will take decades or longer to reach the scale of deployment necessary to reverse the accumulation of carbon and diffuse other crises. In the mid to longer term

grounds for optimism depend on how rapidly and creatively we make four fundamental changes.”

Then you go through these four changes. We could take a few minutes and go through them now or we can just direct people to the book and take up other aspects of this presentation. It's your call right here.

DO: Let's just let people go and read that. The lead into that is adequate to get that started.

KR: Okay. Good enough. Alright. Where can we go from here? We have a good, fat ten minutes left. I'm most interested, of course, in first of all making your work more accessible to the public and urging the public to take this in, to take in the very real danger of our situation and understand... Let me step back a half a step. Perhaps the greatest impact that this book had on me is to understand that we have already, for all practical purposes, permanently altered the dynamics of the biosphere and that climate will be destabilized even if we make radical changes literally overnight, we are locked into hundreds if not thousands of years of a destabilized situation that we could hardly recognize as normal and yet here it is. This is perhaps the hardest reality that we need to penetrate us it seems to me. I'm guessing that I'm mirroring this back to you somewhat accurately. We have already done serious damage to the earth that we were born to, so we're entering virgin territory and this implies social destabilization, personal confusion and disorientation. It goes back to other forms of leadership besides presidential. We need civic leadership at all levels of civic life and I can't think of anything more important than to educate each other as to the grown up, mature adult, difficult reality of our situation.

DO: Well, I think that's right. I think one of the concerns that you mention, the longevity of the changes we're now bringing about is quite extraordinary and whether it's merely a matter of decades or centuries or millennia, it doesn't really matter much. The science is pretty clear that the half life of carbon in the atmosphere is something like a hundred years if I remember correctly. So half of it is gone in a hundred years but in the meantime we're adding more carbon to that. Then the half life of that is another period of time when some scientists like David Archer look at this... David Archer for one writes as I put in the book “defects will last longer than Stonehenge, longer than nuclear waste” and so forth. This isn't a matter that we can just fix it and then walk away and we've repaired something like you would replace a carburetor on a defective car engine. That's a hard thing to get through to people and particularly Americans because we live in a country where things are still pretty new. You go to Europe or Asia. Those places are littered with ruins that are a testimony to how fallible humans can be and how often we can screw things up. We're still pretty optimistic and optimism is not necessarily a friend here. It may be an attitude. We've got to have a more sober way of seeing our situation without falling into the trap of despair and hopelessness.

KR: To return once again to the issue of leadership, you distinguish between transactional and transformational leadership. Could you speak to that a little please?

DO: Transactional leadership is just the folks who keep the trains running on time and the paper moving. Transformational leaders on the other hand, people like Franklin Roosevelt facing the Depression and the rise of fascism in the 30's. Abraham Lincoln in his role. Various kinds of businesses and I would consider a friend of mine, Ray Anderson, CEO of Interface Carpet, Co. a transformational leader, pioneering a company that produces no waste product powered by sunlight.. It isn't just elected leaders that can be transformational leaders. It's lots of people in everyday life. Another friend of mine, Amory Lovins, transformed how we think about energy and Lovins' career goes back into the early 1970s. For forty years he's been reshaping and challenging us to think about energy and energy efficiency in a very different kind of way. Transformational leaders are people who respond to the structure of a problem., not just the coefficients of it, not just the rate at which things get worse, but what is actually causing it and looking at the structure of the rules and the situations that lead us into trouble. If there was ever a time in which we needed transformational leaders, this is it. People who can see things that other people just can't see and cause us to move in a direction that's going to be better than what's in prospect.

KR: You say that "we know in our bones that our well-being, both physical and emotional, grows out of the depth of our connections to each other, to nature and to our ancestors and from the faith that we can prevail through the trials of an unknown future." As a grandfather, do you fear for the well-being of your grandchildren and their grandchildren?

DO: Absolutely. I think anybody that has children and grandchildren would be foolish not to fear for their future and by the same token would be derelict not to do all in their power to change that future for the better. That requires making those kind of long-term decisions. Another friend of mine, David Ehrenfeld refers to it as becoming good ancestors, but that requires understanding how the world works as a physical system and how human behavior and our behavior in particular affects it one way or the other and to change behavior accordingly.

KR: If you'll allow me, I'd like to read one more couple of sentences. You write:  
"Given the evidence that the road ahead will be longer and more difficult than our leaders have been willing to admit and likely longer and more difficult than they understand, that our immediate steps are clear. Preserve soil and forests. Save species. Use less. Deploy solar technologies. Throw the rascals out. Demand accountability in government and business. Elect leaders with the courage and intelligence to lead in the right direction and shift the center of American politics neither left nor right but from the status quo toward a livable and decent future. We must also contend with the defects in culture, politics, science and society that caused the problem in the first place. The modern project, Promethean in its ambitions and Cartesian in its methods, has on balance turned out badly, a reality inadequately described by the vague and sterile word 'unsustainable.'"

You know, I'd like to read the whole book, but we're not going to do that. We're pretty much near the end of our time, Dr. Orr. Those who are familiar with your work thank you deeply for it and I invite you to make any closing remarks in this interview.

DO: Well, Ken, we've said it all and I just want to say thank you for your time and to your listeners for their time and patience and I appreciate that very much.

KR: Thank you very much.

DO: Ken, thanks.

KR: Take care.

DO: You too.

KR: That's Dr. David W. Orr, O R R, Oberlin College, Oberlin, Ohio and so much more . "Down To The Wire" is the book, "Confronting Climate Collapse." Wendell Berry says of it "If climate change were not an issue, what you would have to say would be undiminished in its urgency. I thank you for not giving up, for staking out the ground of authentic hope and for reinvigorating that indispensable term 'maybe.'" The late Stephen Schneider says "a dazzling intellectual sweep across the causes and solutions to our mounting long emergency. Orr shows convincingly that leadership and good governance, not just technological solutions will all have to be part of the mix if we are to save the planet in time."

So thank you very much Dr. Orr and we look forward to rolling up our sleeves and well, you know the rest. Good luck to all of us.

---

To download this and other interviews from the What Now show with Ken Rose, go to <http://www.pantedmonkey.org/>. What Now airs and streams every Monday from 11am until 2pm on KOWS Occidental 107.3. For inquiries, bookings and comments you can contact Ken Rose at (707) 793-2188.