



Interview with Dr. Adrian Forsyth

BILL MOYERS

We've done a documentary report from Vancouver, British Columbia that deals with an effort to try and change conditions in their rainforest. You spent time in that particular forest, haven't you?

ADRIAN FORSYTH

Yes, ten years ago I spent some time up there sea kayaking, canoeing, swimming, hiking.

BILL MOYERS

What happens when you're in a forest world like that?

ADRIAN FORSYTH

I think that type of forest is a very grand kind of forest because the trees are so huge and everything is covered with moss. You can stick your arm in the ground up to the elbow and still be in this mossy layer, so it's like walking on a great big carpet. People compare those kinds of forests to cathedrals because of the light and the elevation, but also because of the silence. It's not a forest that's noisy or full of a lot of singing and chirping and trilling the way a tropical forest is. It's a very calm, peaceful place. I'd say majesty is the sort of feeling you get when you're in a place like that.

BILL MOYERS

You spend most of your time in tropical forests?

ADRIAN FORSYTH

Yes. I'm a tropical ecologist, but I'm a Canadian so I've got a special place in my heart for those places as well.

BILL MOYERS

What takes you into the forest? What exactly is the nature of your work?

ADRIAN FORSYTH

Well, I'm interested in how these systems work. I think if you're a biologist, you're attracted to the intricacy of life. Forests are very complicated places, and so you're attracted by the complexity. The forest is a giant puzzle that you're trying to solve. And you'll never solve it, but it's fun to try it.

BILL MOYERS

What's the puzzle?

ADRIAN FORSYTH

The puzzle is how it all works without any grand architect or planner behind it. I mean, these things are composed of thousands of different elements and species and year after year they give us fish, they give us oxygen, they give us clean water. And, if we're ever to live in balance on the planet, we've ultimately got to understand how to tinker with them more intelligently.

BILL MOYERS

Are we massively altering our forests? I've talked to scientists who say that humans are actually entering the sixth great extinction event, they call it. That our impact on the world is so profound and unprecedented that the change that is coming because of our behavior is like nothing else before. Do you think that is an overstatement?

ADRIAN FORSYTH

No, I don't think so. I look back on when I first started doing this as a college student. I can remember going to western Ecuador in the early 70's and being at the base of the Andes and looking at the foothills covered with ridge after ridge after ridge of dark forest receding into the distance and just sort of blithely assuming that that would be there forever. And then a road was built from the highlands to the lowlands and, 20 years later there were a half a million people living there and not a shred of forest as far as the eye could see.

BILL MOYERS

I live right in the middle of New York City. Does my own survival depend on what happens to the forests?

ADRIAN FORSYTH

I think it ultimately does. I think there's not much future for the planet as we like it if it's a totally degraded system. It's actually possible for people to live in a world that's mostly concrete and hydroponic farming and where your food is grown in a tank, and that is the thing we want to avoid. It's not the fact that we'll go extinct or anything like that.

The true threat is that we'll end up living in this degraded environment. If you want to punish a person you put them in solitary confinement and deny them stimulus. And the natural world is a huge stimulus for us. And we could get along without it. We could eat blue-green algae and synthesize oxygen from seawater, but who wants that?

BILL MOYERS

As a tropical forest ecologist you've been all over the world, in forests from South Africa to Asia. Can you characterize the condition of the world's forests at this moment?

ADRIAN FORSYTH

I'd say the forest is pretty chewed up wherever there's a road. It's only the big roadless areas in the headwaters of the Amazon, some parts of Siberia and in the New Guinea mountainous regions where there are no roads. Those are the only places that are the way they have been

for thousands of years. Everything else is being altered. It's either gone or it's significantly alerted.

BILL MOYERS

I saw a report the other day that said only two percent of Europe's original forests now exist.

ADRIAN FORSYTH

Right. And, I think a lot of people look at Europe or look at Great Britain and say, "okay, well they've lost all their big predators." In Great Britain you don't have a chance to see giant beavers or bears or wolves and life is perfectly livable. But it's perfectly boring in some ways. It's nice to live in a country where you still have that kind of wildlife. And we're not sure how far Britain and those countries will go in terms of ecological decline, as more and more countries get like that.

These island states, whether it's Great Britain or Hong Kong, basically only survive because they massively import fish and fiber and other natural resources from the other less developed countries to keep them going. And then they send out manufactured goods. But if you were to cut off a Hong Kong from all its outside supplies, of course, life would be unlivable there. They would starve and go extinct.

BILL MOYERS

Are we not preserving enough forests to enable species diversity to make it?

ADRIAN FORSYTH

I think we're not really, as a society, thinking about forests in a way that would take pressure off them. I think there's still this idea that we can continue to harvest the sort of accumulation of thousands of years of biomass in those forests. Instead we have to think of fiber as something that maybe we ought to get out of plantations. The way we get corn out of the field, we have to get fiber out of a managed field and really concentrate it the way we learned to do with agriculture and pretty much leave these complicated forests alone.

BILL MOYERS

Can we produce enough wood to meet the needs of six billion people who may be ten billion people or more by the end of this century from plantation farming?

ADRIAN FORSYTH

I think we can. Projections show that we're going to need, in 50 years, about double the amount of fiber that we now produce. And we can lower that figure a bit by recycling and other things, but basically if you intensify forestry and plantations you can produce very efficiently. And the reason I think we can be optimistic of the natural forest is when you go out in the world you see so much waste.

We really ravage these forests and get very little use out of them. And if trees were grown on, for example, all the tobacco land that's now falling out of production in the U.S., as tobacco no longer has such a big domestic market, instead of producing a poison, those fields could produce a useful fiber. And just turning all that tobacco land into fiber production would take a lot of pressure off the natural forests in southeast, for example. So I think we have to look at fiber as something that we can farm and get away from the idea that we can mine these old

forests and live off the accumulated capital of thousands of years of history before us.

BILL MOYERS

When I was growing up I was taught that ecosystems are resilient, that nature heals itself.

ADRIAN FORSYTH

I think to some extent that's true. And that's another source for optimism. I mean, if you look at New England, for example, there's more forest now than there was at the turn of the century. As people got out of farming and moved to the cities to manufacturing jobs, textiles and those kinds of things, the farms were abandoned and the trees have come back. I think nature is resilient as long as you still have the basic things to repopulate. But once you lose species, of course, they're not going to come back. The question is, what are the critical areas where we're likely to lose species?

BILL MOYERS

What's the threshold? How do you know when you've reached the threshold between sustainability and collapse?

ADRIAN FORSYTH

I don't think we know, because almost every system that we've looked at that's been altered continues to go into some decline once you reduce it to a small area. You've really got to have a lot of area for animals to persist and be viable. And as soon as you get small numbers, like California Condors, they had to nurture those things along with extremely expensive captive breeding and we just can't do that for thousands of species. We've got to have some big reservoirs.

BILL MOYERS

I've talked to scientists who say one of the problems is we just don't know enough, that we don't yet have scientific database to inform us as to what we ought to do.

ADRIAN FORSYTH

I think it's in part because we have these pathetically short life spans compared to natural cycles. We're around for fourscore or whatever if we're lucky. Natural cycles take much longer than that. These trees we're dealing with live many times our length and so changes may be happening that we're just not able to perceive in our own lifetime. Research grants are given for a year or two or three years and people move on and so there's a very limited historical view of life on earth and that really limits our ability to comprehend the rate at which things are changing.

BILL MOYERS

Put a picture in my head of the most stunning thing you've seen that illustrates how fast change is coming.

ADRIAN FORSYTH

I think the fact that in my life there's twice as many people trying to make a living on the planet as there was when I was born. That's just something I would have never guessed, that we

would have suddenly stepped into a planet where, we're adding millions of new mouths to feed every day. I just wouldn't have guessed that things could have kept accelerating the way they would and that we became our own worst enemy.

BILL MOYERS

Do you think that's so, that we are?

ADRIAN FORSYTH

Yes. I think for most of our history it was something was going to eat you. It was either a predator or a microbe. It might have even been a neighboring tribe. But now in spite of any peace agreements we might negotiate with hostile "tribes," so to speak, our collective weight on the planet is a lot for the planet to bear.

BILL MOYERS

When I was a young reporter, a high school reporter on the *Marshall News Messenger* I said to the publisher one day I'd just read a story about the population probably doubling in my lifetime and I expressed a certain doom and gloom about that. And he said, oh, don't worry about that. He said, that means think of how many more pairs of shoes that we'll be able to sell.

ADRIAN FORSYTH

People still have this faith that human ingenuity will solve all problems but, the fact is when you see an image from outer space, it's a pretty small place and it does have real limits.

BILL MOYERS

One scientist I spoke with at this program, a freshwater specialist, told me that we don't even know where all the wetlands are in the world, or all the dams. Is that true for the forest as well?

ADRIAN FORSYTH

We don't, at least in the tropics, have a good sense of what the word forest means. There's actually dozens and dozens of different kinds of forests out there, all of which have a different ecology. I remember once being in Ecuador, on these high tabletop mountains and when you climb up on top of one of these mountains, you're suddenly in this kind of dwarf forest land where the ground is covered with moss and orchids, and then there are these tiny wiry little trees. And until that point, no one really knew that type of forest ever existed.

And this was five or six years ago. So we're still starting to understand the diversity of vegetation on Earth and at his very primitive level, we don't even have the grammar to describe it.

BILL MOYERS

Haven't people been keeping records of this sort of thing?

ADRIAN FORSYTH

Not really. I think of record keeping as almost nonexistent. In a few cases you'll see someone for idiosyncratic reasons out there counting a plot of mushrooms every year for 50 years or so,

and then they discover by accident that mushrooms are in trouble. But there's no systematic effort of humanity to monitor how the health of the planet is going. And that's probably because no one's ever wanted to pay for that, or thought it was important.

BILL MOYERS

Let's come back to the Vancouver story. You're a Canadian – should they even be taking out any of those logs?

ADRIAN FORSYTH

I think that it's a good experiment to try to see if you can manage one of these big forests in some kind of rational, sustainable way. And that entails trying to figure out how to mimic a natural disturbance: looking at what happens when a tree naturally blows over, gets hit by lightning, and try and harvest according to those guidelines.

But even then, you're still bringing in helicopters, you're bringing in chainsaws, you're bringing in some kind of elements that you can never predict the outcome. Maybe the helicopters and chainsaws are enough to discourage some kind of wildlife from utilizing the area that has some kind of long-term ripple effect. So, let's just call it an experiment, and maybe it's necessary because people depend on the area for their jobs. It's better to have some people there fighting to have the forest as forest than just to ignore it.

BILL MOYERS

Do you think people will pay for sustainably harvested trees?

ADRIAN FORSYTH

I think some people will pay, and then we need government policies and taxes that work on consumers to get them to feel good about their purchases and pull the market along.

BILL MOYERS

What excites you about your work?

ADRIAN FORSYTH

I feel incredibly privileged to live at a time when there still are forests with jaguars or grizzlies in them. I keep thinking about what my descendants and people 100 years from now will say. I hope they'll say that we realized what an awesome privilege that we had and have kept on it. If not, they'll just think we were complete idiots to let these things slip out of our grasp.

BILL MOYERS

If you had to give a grade to the world's environmental health, what would you give it today?

ADRIAN FORSYTH

I'd give it a C. I think we have a lot of resilience out there. For instance, we're growing more food than we ever have. There are some quite hopeless places like Bangladesh or Haiti. You look at those places and you wonder how they can ever escape from that downward spiral that they're in. But there aren't many like that. We destroyed some landscapes, but I think most of it can be recuperated. We haven't caused, yet, massive numbers of extinction. We feel that

we're on the edge of it, but we haven't really eliminated the tigers in India, or obscure little insects on a mountain in Ecuador. At least most of the planet is still with us in terms of species. So, I don't think we have a failing grade yet, but we're definitely not getting A's in how we're running things.

BILL MOYERS

Some environmentalists and scientists we talked to for this broadcast have said we have about 30 years at the most to really transform how we connect to nature, how we produce and consume our goods. Thirty years, that's not very long.

ADRIAN FORSYTH

No, it's just a human generation, really. And in our society, I don't expect to see this transformation in 30 years. I think this is a transformation that's going to take centuries, that's going to require us to stabilize population. Maybe we could do that in 150 or 200 years with a lot of investment in it.

BILL MOYERS

But what will the world look like by then?

ADRIAN FORSYTH

I think we will have degraded a lot of it to the point where it is like a Haiti. And I don't want to be too pessimistic about it, but I think that we have some very deep-seated cultural attitudes and economic beliefs that are just deep-rooted dogma that we have to grow, grow, grow. One hopes that that's not just fundamental human nature that's not capable of changing. Some people believe that. I don't.

BILL MOYERS

Is there anything in your own experience to suggest that we human beings can defer gratification for the long run? Can we plant trees under which we'll never sit?

ADRIAN FORSYTH

I think so. Society as a whole regulates human behavior incredibly. I'm sure in our early in our history, we did a lot more clubbing and murdering, and all through our history we've been much more violent than we are today. Today, we live at high population densities, and we kill each other relatively infrequently. And it's just that we've applied our civil code and our code of conduct to these interpersonal relationships and not to our relationship with the planet.

So if we can somehow be as civil towards ecosystems and other species as we are to each other, I think we have a lot of hope, but that's a long process. It took us, you know, thousands of years to get beyond slavery and feudalism to where we are today.

BILL MOYERS

Do you think we can redefine what we need in terms of what nature needs?

ADRIAN FORSYTH

I think we can, and I think we have to. I think we have to somehow come around to the idea that

equilibrium and balance is somehow aesthetically and spiritually more desirable than expansion and growth. And in fact, if we could just change how we judge each other's relative worth, we could have a wonderful civilization that would make very little demands on the planet.

BILL MOYERS

What do you mean, redefine each other's worth?

ADRIAN FORSYTH

Well, for example, rather than judging someone by their income, a civilization that would be great to me would be one in which our material necessities for food and shelter are met. But then it would have good music, good art, good literature. Those things cost nothing in terms of natural resources. They're products of the human brain. They don't deplete the planet, yet they make a wonderful society. So, it's our own brain that is the ultimate resource for civilization. Be nice to each other, use your brain, and produce good things that we can enjoy. That doesn't destroy the planet. It's sport utility vehicles, gigantic houses, meat three times a day. Those things, stupid things, destroy the planet, really. So, if we can get rid of the primitive aspects of our culture, we have a sustainable world just waiting for us.

BILL MOYERS

Why is it important to think in terms of ecosystems? Most of us who are not scientists don't think of it that way.

ADRIAN FORSYTH

Well, I think you have to think about these big picture things because that's the scale at which things are produced. We don't really depend on individual species. You can't think of us depending on a salmon, for example, without also depending on the river which flows off a mountain, which is covered with trees. And so if you actually just tried to manage and understand the salmon without understanding how the river worked and how the forest worked, and even how the mountain worked, you would fail, ultimately. So, you really have to look at the whole system that we're embedded in.

And in the past, we've tried to save a panda, or a tiger, whatever. We now realize that we have to save the whole ecosystem, not just the particular thing of interest, but everything that it's connected to, including the people that live in that ecosystem.

BILL MOYERS

You study the dung beetle?

ADRIAN FORSYTH

I do study dung beetles. I'm ashamed to admit it, but I'd rather study butterflies or something.

BILL MOYERS

Why dung beetles?

ADRIAN FORSYTH

Well, because again, they're part of these ecosystem processes in a tropical forest. You know,

a lot of the trees rely on monkeys, for example, to get their seeds spread through the forest and planted. Typically, they'll produce a delicious fruit. The monkey will come along, eat the fruit, swallow the seeds, and a few hours later, defecate the seeds out some miles away from the parent. And, unless the dung beetle comes along and buries that in the soil, those seeds will be destroyed by a fungus or by a seed eating bug and we won't get that tree replanted. So, they're a part of this recycling system. And in the process, they aerate the soil, and they introduce nitrogen into the soil that otherwise would wash away in the rain. And they're like anything else, they're a cog in the big machine. I study them just because there are a lot of them, they're beautiful, and they're important.

BILL MOYERS

What are the dung beetles teaching us?

ADRIAN FORSYTH

They're teaching us that animals are incredibly sensitive to disturbance. I would have never guessed before I started working on these things that they would care in any ecological sense about the status of the forest. I would have thought they worry about where their next meal would come from. So that if hunters eliminate the monkeys, that might make things hard for the beetles. But in fact, if you just start logging the forest, that's enough. Just changing the light coming into the forest is enough to completely change the communities. And they turn out to be incredibly sensitive to how the forest is structured. They're also very sensitive to temperature. If you go up a mountainside, the different species replace each other along the mountainside. And so again, if you warm the climate up a little, those things are all going to change in their distribution. The ones that are up top are going to have no place to go if it gets hotter.

BILL MOYERS

We do think about saving the panda, but we don't think about saving the dung beetle.

ADRIAN FORSYTH

No, not many people are worried about that.

BILL MOYERS

How do we change our way of seeing nature so that we understand the dung beetle belongs here as much as you and I do?

ADRIAN FORSYTH

Well, again, I think it's just a matter of self-education. We just have to realize that almost everything out there is doing something interesting, and perhaps important. And just take that almost as a given. It will take us a long time to work out the details, but I can't really think of anything that anyone has ever studied that hasn't turned out to be important in its own small way. It may exist, but so far, they don't seem to be very common.

BILL MOYERS

How could things be so bad when they look so good?

ADRIAN FORSYTH

Exactly. It's like the passenger pigeon. They used to darken the sky and no one who ever saw that could ever believe that a few guys with shotguns and sticks could ever diminish passenger pigeons, let alone extinguish them. But that's what happened. That's, again, where it's very hard for us to project our impact very far into the future.

BILL MOYERS

When I tell people about our Kansas report, they say to the people here in Manhattan, "Well, why should we be so concerned when we're able to produce such food?" We think of the breadbasket of the world. "Why should we be so concerned, there's so much of it?"

ADRIAN FORSYTH

Again, you have to look at what went into your wonderful produce. We mined some ancient fossil fuel that took tens of millions of years of swamps and dinosaurs to be compressed into natural gas and oil. And we cook that up into nitrogen fertilizer and apply it to those fields. We synthesize all kinds of pesticides which gradually have some toxic effect in the environment. If you actually did all the calculations about what went into our abundant cheap food, you might conclude, well, we can't keep this up forever. Eventually, the cheap fertilizer is going to run out. Eventually, the cheap transportation is going to run out. Eventually, we're going to have to do something about regulating toxins in our water. So, the picture is only rosy for a little while.