

Climate Change 101

A La Trobe University production

Narration:

Dear Mother Earth. On behalf of the human race, I apologise for the way that we have been treating you. It is disrespectful, and you in no way raised us to behave this way.

There's no longer any doubt that the Earth is in a lot worse shape than it should be, and that's largely due to those who call it home. If we were renting the Earth, we'd have no hope of getting our bond money back. Indeed, if she were our actual mother, we as her children have committed the equivalent of pushing her down the stairs.

So to start us off, how has the global climate been acting in the past? Dr Ben Kear of La Trobe University has this to say.

Dr Ben Kear:

We're looking at climate change for the relatively recent geological history from the end of the age of dinosaurs 65 million years ago. We can see a dramatic record of climatic alteration and species alteration. Up to the last two million years, which is one of the most famous periods of climatic change recorded in the geological record, the ice ages, the famous ice ages, you're talking here about rapid alteration perhaps in as little as decades of glacial to interglacial periods. In the northern hemisphere, we had some massive ice sheets covering most of Europe and North America.

In Australia, we would have had the onset of aridity, sand dunes in Melbourne, these sorts of extreme climates which then oscillate backwards and forwards relative to moisture. Alongside of this, you're basically getting thermal change. So we see species proliferate. Some species go extinct. Climate change isn't a sort of death knell for everything.

It prompts other species to proliferate so say, for example, we see the radiation of modern-type kangaroos as we have them today on the back of climate change. We see the extinction of others. So climate change and species alteration go hand in hand and looking at the geological record of this and the fossil record of this, is how we understand what's going on today.

Narration:

Climate change has clearly happened before, because the world is notably lacking giant woolly mammoths and so forth. But if that is the case, can we be sure that it's actually humans that are causing this? It's a natural process, so naturally it would occur whether we were around or not. Dr Andrew Glikson of Charles Sturt University.

Dr Andrew Glikson:

In the present time, the only contenders for driving the climate change, which we are witnessing, which is now well over 1 degree since the Industrial Revolution. That's the mean global average.

Out of the greenhouse gases which the industry has emitted to the tune of more than 300 billion tonnes carbon since 1750 all of the sudden. Now, we know that solar vector, forcing vector, energy rise vector is limited to plus/minus 0.1 degree or so. But there is no other forcing which can result at what we're looking it. All kinds of fix had been invoked but they turned out to be not applicable in terms of the science.

Dr Ben Kear:

So what we can see is, OK, we are now in an interglacial period as we would know it for the last two million years.

But human activity is certainly accentuating the processes we have today. It's infantile to suggest that we don't have an impact on our environment. We very clearly do with all the pollutants we pump out into the atmosphere, CFC gases, all of the rest of this sort of stuff, ozone layer holes—all this sort of thing. It's all a reality. Shrinking ice caps that will affect what's going on today in terms of our society as we see it.

Narration:

So there are natural conditions that lead to climate change, but in this instance, our instance, we only have ourselves to blame. Let's take a moment to examine how we got in this state, shall we? There's certainly a large amount of finger pointing that can take place, but before an accusing digit is waved in anyone's direction, it would maybe bode well to note that when humans started polluting the world, we didn't know better. But times have changed, we're older and, in theory, wiser, we should know better and we should be taking steps to make amends. But lets not leave those fingers waiting any longer, and turn to Professor Tim Flannery, noted Australian environmentalist.

Professor Tim Flannery:

Carbon sequestration is a process whereby you capture the carbon dioxide that comes from the smokestack of a coal-fired carbon plant for example, compress it, and pipe it to somewhere, a well, and then inject it into the earth. And you hopefully inject it down far enough, and in the right sort of geological region so that it stays there.

Unfortunately we've gone so far down the road of coal that we have no choice in the matter. And what's really morally invidious about this is that the coal people have lied to us for decades now about the dangers of climate of change. So they've been spending millions and millions of dollars misleading people like you and I and other members of the public on this issue, particularly in the United States, and now we've got to turn around and give them billions of dollars to get their act together. It's not a morally satisfying position to be in but it's the absolute reality of the circumstances that we're in at the moment.

Narration:

So there you go. Some companies are clearly in the wrong, but are they at all unrepentant? Lets take for example, the multinational oil company BP, who now use a green colour scheme in their logo. Professor Carol Adams of La Trobe University has this to say.

Professor Carol Adams:

The fundamental nature of the main part of BP's business is fundamentally unsustainable. What they're concerned about obviously in using a green logo is their reputation and the fact that the nature of their business is fundamentally unsustainable, they're using the marketing to compensate for that in some respects. That's not to say that they might not also be increasing the use of renewables but there is a lot of green washout there.

Companies are recognising that marketing themselves as green has some benefits in terms of legitimising what they're doing to a wider audience. The problem with that if they take it too far is that people aren't stupid. They can see through green wash and the press are always very quick to get on to organisations which they find are overstating their environmental credentials. And if they're not living up to their marketing, they will expose them as will NGOs. And the internet is really powerful these days in getting out messages where organisations are not living up to their marketing.

Narration:

Slowly but surely companies are starting to come around, or at least claim that they are cleaner and greener. So what could be motivating them to do this?

Professor Carol Adams:

I've been talking with the senior staff from corporations for a number of years, and I've really seen a shift lately in the attitudes of the chief financial officers of companies and that has come about directly as a result of the introduction of legislation requiring them to report on their admissions and bringing with it stiff penalties for non-compliance. This area which was previously really left to environmental managers and directors to look at this kind of data, and report this kind of data, and collect it is coming under much more scrutiny now from the finance area because of the non-compliance issues, and the possibility in the future of liabilities and costs arising from carbon emissions.

And because chief financial officers can now see a dollar amount attached to carbon emissions, they are paying much more attention to it than they were previously. In the past, chief executive officers, the CEOs of large companies have tended to have the best understanding of the costs and benefits attributed to managing environmental issues, whereas the chief financial officers have often got in the way because of the difficulty of translating those costs and benefits into dollar amounts.

Now that's all changing, and I think we will see companies paying much more attention now to carbon emissions, and hopefully, other environmental issues as a result of that legislation. So I think the attachment of, or the now translation of

carbon management into dollars has made a big difference to corporate behaviour and attention to their climate change impacts.

Narration:

So while their intentions may not be entirely noble, some corporations are seeing the sense in trying to be green, or at least, appearing to try and be green. It all comes down to the dollar sign, a different kind of green.

Professor Tim Flannery:

The coal industry, they're doubling their profits, they're getting twice as much now as for thermal coal as they got a year ago, three much as times for coking coal, and yet they're still putting no money into this, or not enough in. Putting some in, but not enough, anywhere near enough to get this process running. So we are going to have to give them more money despite the great profits they're making to get this thing moving. But our future depends on it. We have no alternative but to get carbon capturing storage working at scale in the very near future.

Narration:

So while some companies are making efforts, whatever their intentions, others such as coal and oil or mining industry see more benefit to their ledgers if things remain the way they are. It's at this point that we hope that the government will act in the best interest of the planet. So what's happening on this front? Professor Clive Hamilton, of the Australian National University.

Professor Clive Hamilton:

Well, look. The reason why the climate skeptics or so-called have been affected is because whilst not many people reject the science, there are a lot of people who would like to believe that the science is exaggerated. Therefore, they don't need to take action, which is as resolute or radical as the science demands.

And so, our political leaders, even though they reject the views of the climate scientists, nevertheless like the fact that the climate scientists are out there sowing doubt because if they weren't, there'll be a much stronger public demand for our political leaders to act. And, of course, that would create difficulties with powerful forces, notably the fossil fuel companies.

The fossil fuel lobby in Australia, they call themselves the Greenhouse Mafia, is an extremely powerful political lobby and I think the most powerful industry lobby that we've ever seen in Australia. And with the election of the Rudd government, some of those corporations that previously funded and promoted climate science denial shifted their strategy when they knew that some policy was going to be introduced to try to water down the policy. The emission trading scheme, in particular and to get as much financial compensations or so-called as they could out of it.

Narration:

So Australia, by itself, mightn't be as progressive as we would hope. What about the global community though, surely things are different there? Professor Joseph Camilleri, of La Trobe University.

Professor Joseph Camilleri:

We've now had this issue on the international stage for well over 20 years. In fact, the first major step was the decision to establish the international Intergovernmental Panel on Climate Change (IPCC). And it has established, beyond reasonable doubt, the situation we are facing on the question of climate change.

So that has been a very significant and probably a decisive move because it's given legitimacy to the assessment of the situation, but they do not make policy recommendations. It is clear what it is that they are suggesting must happen if irreversible heating of the world's atmosphere is not to take place.

Narration:

So international talk seems to show that everyone agrees there is a problem. Surely that's good news, isn't it? An achievement like the Kyoto accord can only lead to good results.

Professor Joseph Camilleri:

The particular agreement, the particular targets that were set, the particular ways that were suggested as ways in which targets would be met that probably all falls short of the marking including the fact that the United States was not one of the signatories for the Kyoto protocol.

But, nevertheless, to have that principle accepted that the international community as a whole collectively sets target for individual states and nations and that each is legally bound to observe that target is a major leap in terms of where we'd been in the past.

Narration:

Lets not forget the other issue of this, shall we? The countries that are making the greatest changes aren't the major contributors to the problem.

Professor Joseph Camilleri:

The trouble comes with, what I call the emerging transitionally communists, the Chinas, the Indias, the Brazils, the Argentinas, the South Africas who have not historically been a major contributors to the problem, but loom-like significant contributors of and then extend to 20 to 30 years. And what will they do? In part, they have argued. Some are still arguing quite strongly that they still have a long way to go before their contribution to the problem can equal that of the industrialised Europe or industrialised North America. So they're asking for a period of grace, if you like, and that is an issue.

Narration:

Quite a lot of the international diplomacy, at the moment, seems to be caught up on exactly who has the responsibility.

Professor Joseph Camilleri:

What is the historical obligation of, let's say, Britain as the first major industrialising power in modern history? How does it compare with an obligation of the Vanuatus of this world, the Bangladeshes of this world, or even the Chinas of this world?

So there is a historical obligation. That's one thing. The second question, just illustrating, is the question of intergenerational responsibilities. So historical obligation is the past, the next one is the future, is a life, a hundred years from now, got the same value as a life now. If you say, "No, it hasn't" well, how much value has it got? Very difficult question.

If you say, "It's got exactly the same value, a life a hundred years from now is a life now" who gives voice to that life that does not yet exist? In which forum will that voice be heard and how?

Narration:

The simple fact is that we are all responsible for what has happened, as a global community. We have one Earth, nothing is achieved by blaming each other if it's just burning down around you, or flooding as the case may be.

Professor Joseph Camilleri:

The problem that we face with climate change is that we're engaged in a race against time. International law and international organisations are making extraordinary leaps forward, but the problem in the challenge prospect climate change is making greater leaps.

Dr Andrew Glikson:

Well, I would think that human technology is up to it in terms of planting fast-growing trees which are going to absorb carbon dioxide in terms of carbon char, soil char, in terms of any chemical sequestration, but it has to be a monumental project on a scale which will be backed by hundreds of billions of dollars basically you're looking it but it has to be global. This type of activity has to occur worldwide and most urgently. And so, we have truly ran out of time for any slow mitigation efforts.

Narration:

This has been, if nothing else, a sobering program if ever there was one. But surely, with so much bad news to go around, there must be some hope, mustn't there? Surely it can't be too late. For a well needed glimmer, we turn now to David Spratt, co-author of *Climate Code Red*.

David Spratt:

Climate change is the greatest threat that our species has ever experienced, more than Ice Ages rolling backwards and forwards across the continents, or any of that sort of thing. This is the greatest threat that we've ever faced because it threatens to wipe us all out.

We're now on a very short time fuse. We have the limited amount of time to start turning things around. Can we do it? Yes, we can because we have history to show that we can and in *Climate Code Red*, one of the things we have pointed to was in fact the Second World War. There are periods in history where economies and societies had been transformed in a really short period of time. The Americans tried to keep out the Second World War because they thought it was good for business just to keep on doing that.

From the day after Pearl Harbour, within one year, the American economy was transformed from the largest producer of consumer goods in the world to the largest producer of military goods. In one year, the fundamentals of that economy were transformed because the government went to the car companies and said literally two days after Pearl Harbour, you have produced the last civilian car until the war's over because you're productive capacity is now can be used to tanks and planes.

And they did it. And we know of, for example, in the middle of the Second World War that the large participants, United States, U.K., Germany and Britain were spending between 40% and 70% of their economy on the war. Germany got up to \$7 out of \$10. They were prepared to spend more than half of the economy to solve a problem and transform economies and do amazing things to it. The greatest technological outburst of innovation and research, and new ideas and new technologies, I mean half of what we've got in this world today.

The electronics revolution, would they come out the innovation to do with the Second World War? So that is clearly an example that if you have the political will to solve a problem, you can turn things around very, very quickly. We also pointed to the Apollo program. Kennedy got up and said, "We will go to the moon not because it's easy, because it's difficult." And when he made that speech, they had no idea how to get there.

I mean, rockets exist in a very primitive form and within 10 years, they had gotten to the moon and back, an incredible technological feat. Five years after he made that speech, the amount of non-military research and development in the United States had gone up by a factor of five. Three quarters of their national R&D was devoted to the Apollo program. So if you want to do it, if you want to apply the resources, you can, and that was about problem solving.

Can renewable energy solve our problems? Well, looks like it can. Do we need to do more? Yes. If we spend the money, would we get the answers? Undoubtedly. So it's not these things are technologically impossible, it's not that they are economically impossible, we have plenty of resources here, not that we lack capacity or innovative skills. It's just that we lack political will. And so there is the evidence that we can do it if there's the will and that's why I believe we can do it.

Narration:

Our planet is in trouble, but if we want to make a difference, if, as a planet we want to unite, it's within our reach. But while the hard work needs to come from

the leaders of our countries, everyone can contribute in their own way. I'll leave it to our guests to give you some advice on how to best be active.

Professor Tim Flannery:

nothing ever changed the world except a few good well intentioned and effective individuals. Businesses are built often around the vision of an individual. So if we can somehow use our own individual capacities to try to use human intelligence for the benefit of the planet, that's the fundamental thing. In our everyday lives it could be as simple as not wasting electricity.

So that sort of thing is really important, I think, people realise that we are individuals imbedded inextricably within the living matrix of our Earth. And the things that we do have a big impact on Earth, cumulatively. We're all individually perhaps small impact, but cumulatively a big impact when there's 6.6 billion of us. So being responsible for your own emissions is probably a pretty good place to start.

Professor Carol Adams:

One thing everyone can do is eat less meat. Whole rainforests are being chopped down to graze cattle so that you can eat your burger. That's inefficient use of land to have to grow the grain to feed the animals and then eat the animals themselves and graze the animals. And another point is that animals emit greenhouse gases themselves.

David Spratt:

Bikes rather than cars, how to use energy in the house don't fly. The single worst pollution for most people in this country is flying. So absolutely getting involved in the political process as well, hook into local climate action groups, get mad or get even and don't stop. I think it's really important that we're passionate about this and just hound the political process.

Professor Joseph Camilleri:

All of us as persons, as members of families or households that can make decisions about our own lifestyle that go without saying, but it's now so obvious. I don't think it needs repeating in terms of how much energy we all consume both as individuals and as members of families, households, local communities. But important as that is, and I hope I have emphasised that it is important, I think the other thing that I'm going to mention are regarded as more important. And that is to what extent is each person individually prepared to hold major decision makers to account for the decisions they are making or are thinking of making at the national and international level?

Holding them to account, ensuring that key questions opposed to them and that they are not satisfied until proper answers have been given. At the moment, there aren't enough Australians, there aren't enough Americans, there aren't enough Chinese, who are pressing and pushing their respective policy makers to account on difficult questions. And that's reflected in our media, it's reflected in our public life, it's reflected in our parliaments, and so on, pushing them to

accountability on this question, and I think it's something we can all do, in small ways and more complex ways.

Narration:

Climate Change 101, the audio documentary has been a production of La Trobe University. It has been written, produced and narrated by Matt Smith.