

Climate Change Part A: the Great Distraction

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[0 : 0 0] we ask that you would help us to share only that which is good only that which is confirmable through your scriptures and only that which is to your Lord in Jesus name I'd like to read first of all from Psalm 148 you will just listen to this before we get into the the company of the climate change debate let's just reflect for a moment praise the Lord praise the Lord from the heavens praise him in the heights praise him all his angels praise him all his books praise him sun and moon praise him all you shining stars praise him you highest heavens and you waters above the heavens let them praise the name of the Lord for he commanded and they were created he established them forever and ever he fixed their bounds which cannot be passed praise the Lord from the earth you see monsters and all heaps fire and hail snow and frost stormy wind fulfilling his command mountains and all hills fruit trees and all cedars wild animals and all cattle creeping things and flying birds kings of the earth and all peoples princes and all rulers of the earth young men and women alike old and young together let them praise the name of the Lord for his name alone is exalted his glory is above earth and heaven he has raised up a horn for his people praise for all his faithful for the people of Israel who are close to him praise the Lord you don't remember anything else that's good now let me start by saying I'm not a climate scientist as they mentioned I'm a geographer and so there are technical details about which I may be quite frosty however it's a topic which has interested me for a long time and some of my closest friends might suggest that I'm giving this talk because of sour grapes having lectured for 40 years on related topics and nobody having paid any attention to me but I hope that's not the case so in order to be as fair as possible it means we need to try to see what the intergovernmental panel on climate change has said before we get off onto our own musings about what the significance of this is what I hope to do this morning is to let's say define the nature of the distraction that's involved in the climate change debate and to show some images which in my view illustrate the much greater range and much greater depth of the problem which is being at the moment so heavily emphasized in the context of climate change and it seems to me from a broader holistic perspective that

the issue is one of stewardship of the earth not only the earth but the seas and the animals the animals and the animals and the animals that is created and which we understand is also in need of redemption so the issue which has been so dominant in the media for a couple of years now has had many beneficial effects And I certainly don't want people to go away with the impression that I want to undercut the work of the IPCC, even if I want to, it will have limited impact. That work is the best available climate science.

And, as those of you who have read the readings for this morning, these books come out at an astonishing rate. The astonishing volume, I estimate, is that there are 7,500 pages in this sequence of reports from the Intergovernmental Panel on Climate Change.

So I don't recommend that you read these, only if you have a particular question that is not covered by this most important commentary by Sir John Horton, which is called Global Warming, the Complete Briefing.

And 250 pages is, in fact, a briefing relative to 7,500 pages that you'll find in the reports. Sir John Horton, as many of you will know, is an Orthodox Christian. He appears regularly on the Regent College Visitors list.

[5 : 5 8] He's a personal friend of Jim Houston, so I can't really say much against him at this point. But what I'm going to say is not that this is a bad book, it's a wonderful briefing, but it is within a rather narrow term of reference.

It deals really with the atmosphere exclusively. And my concern is that the distraction is taking us away from a whole range of other matters which we need to look at seriously, our Christians, and our relationship to the environment.

It is perhaps not always realized that Al Gore is a personal Christian. If you've read An Inconvenient Truth, or if you've sat through it as a film, you may not have read his earlier book, Earth in the Balance.

And in the book, Earth in the Balance, he expresses his personal faith in the world of Jesus Christ. And it's a very moving section of that book.

And in many ways, from my perspective, this is a better book, but as the favorable academics would be, this gets much more billing. And it is this book which has to have a remarkable impact on public opinion. And it's probably because it's in the form of a film, and people don't read today, but they do go to films, and when they see something, they are more impacted.

[7 : 34] Hence my attempt to bring a few images today. But this is, and with all levity aside, we owe Al Gore an enormous debt for bringing to our attention some of these issues.

And I think that it's a lesson on some of the ways in which we might more effectively communicate with the world without our own perspectives.

I have also previously, at Learners Exchange, recommended this little book, which is called For the Beauty of the Earth. It's memorable because of the Double Barrel name of the author, Boomer Predator.

And if you have a chance to pick this up, it's really very good value. So, having said all this, let's get on with the task.

What is it that the IPCC said? And the most recent summary of that. And the important thing is to get this exactly right, so that we know what the claims are.

[9 : 04] I'll continue to try to read without my glasses on. So, we've got a report which is stated to be unanimous, from this group of 1,200 climate scientists from around the world, declaring that global warming is not going to be a most pressing problem, but that humankind is responsible for it.

And the five points that are the most technical part of my discussion this morning are as follows. First of all, that global atmospheric concentrations of carbon dioxide, methane and nitrous oxide, have increased markedly as a result of human activities since 1750, and now far exceed pre-industrial values determined from ice cores spanning many thousands of years.

That's the first observation. Secondly, these 1,200 climate scientists have very high confidence, by which they mean a 9 out of 10 chance of being correct, that the global average net effect of human activities since 1750 has been one of warming.

and they have calculated the specific energy that has been added to the Earth system by human activities. So, boy with the numbers.

[10 : 50] Thirdly, warming of the climate system is unequivocal. As is now evident from the observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.

Fourthly, anthropogenic warming or human-caused warming and sea level rise will continue for centuries, due to the time scales associated with climate processes and feedbacks, even if we were to stabilize greenhouse gases as of today.

Let's say, no further emissions, and we're still looking at the effects over several centuries. Finally, continued greenhouse gas emissions at or above current rates will cause further warming and induce many changes in the climate system during the 21st century that will very likely, and by this I mean a greater than 90% probability, be larger than those observed in the 20th century.

So this is the summary of what the climate change experts have concluded. It's a vast amount of data, and it's an impressive body of data, but of course there are still elements of it which are uncertain.

But when we are faced with uncertainty, which is always the case in science, then we would be wise to bring in the precautionary principle, which is to the fact that if we are uncertain that the trends look very probable, or then it would be wise to act in order to avert some of these apparent likely changes.

[12 : 58] Let me just briefly, before going further, comment on this matter of uncertainty and likelihood of what things are happening. In some ways the climate scientists of today have assumed their role in the prophets in the Old Testament.

And people seem to interpret some of this as being predictions of a very precise nature. And they are nothing of the sort.

The procedure that has been followed and continues to be enlarged is one of asking the question, what if?

What if the present trends continue? No climate scientist is any better than you or I in foretelling the future.

But what they can do, reasonably enough, is to create a series of scenarios which give the probability of certain kinds of events happening.

[14 : 04] Now this all sounds like the voice of Stanley. So what is the problem? There are just two aspects of the distraction that I want to talk about today and next time.

At one level, I would judge that the Christian community is poorly prepared to respond, not because it doesn't have the expertise.

I mean, Sir John Horton chaired this process for the first eight years of its existence. This book is available for us and can be read with a great deal of clarity.

But the distraction from my perspective is that there's been little effort in sorting out what the Bible says and our responsibility in relation to nature as a whole.

We read from Exodus 19 at the 730 service this morning. Just wanted to put that in. For those of you who are still in bed. We read this magnificent passage where the children of Israel were camped at the base of Mount Sinai.

[15 : 28] And this was prepared to the covenant being delivered to Moses on the moon. Now there are all sorts of wonderful things that were pointed out by Dan in the sermon.

But not one of them sort of got the idea which was very forcibly dressed on me, I suppose, because I've been preparing this talk.

But the imagery of that event, this high mountain, those of you who have been to Jebel Musa, or Jebel of the mountains actually is Mount Sinai, will remember the starkness and the magnificence of that mountain landscape.

The description of the giving of the law, of the promise of the covenant, the kingdom of the covenant involves fire, smoke, earthquake, trembling, the magnificence of this great setting.

It's everywhere. God repeats to Moses, I have carried this people on eagles' wings.

[16 : 45] The imagery of the created order being part of this covenant is similar to the way in which the noatic covenant explicitly embraces all parts of creation.

The whole redemption story, sisters and brothers, includes the created order. When will we ever hear a sermon on this topic from our followers?

Unfortunately, noises come from other churches about the topic, and are all suitably vague, but nevertheless they are responding to the topic which is of great concern to people around us.

So consequently, it seems to me, here is one of the purposes of Learners' Exchange, one of the four dimensions of Learners' Exchange, is to talk about topics that are very much in the news, and to see what kind of Christian perspective we can develop in relation to those topics.

I think at this point people are assuming, or many people are assuming, that Christians in general don't take a lot of attention to this.

[18 : 02] Now, you are all aware of many exceptions to my generalization, and I stand corrected that all the people in this room have sorted out the ecological theology in great detail.

But, I suspect that as a community we don't project a very coherent perspective on this issue. And I'm not standing here suggesting that I know it all.

Please don't get that impression. I also have considerable difficulties with some of the issues that arise in this area.

But that's, I thought, the point about our Learners' Exchange program, that we share some of these challenges. So, that's one issue that is a distraction, that we are not responding to this climate change in a very coherent fashion.

Second, at another level, the reports of the IPCC are hopelessly unbalanced with respect to the profound complexity of what the environment is all about.

[19 : 17] What about human activity beyond the emission of greenhouse gases? What else are we doing to the environment because of our inadequate perspectives?

What do we know about the variability of our climate and environment in the absence of human beings? And particularly in the absence of greenhouse gas emissions.

So, I propose first of all to remind us of what the focus might be for Christians. And then I want to show a few images, as mentioned, of environmental issues that range from beyond those of the

IPCC.

And I'm hoping that this might motivate us to come back next week to discuss what the implications of this are for Christian living. And so, first of all then, let me suggest that we should be thinking and praying as a community about the relationship between our activities and the environment.

We're called to care for the earth. We're called to... We're called to...

[20 : 50] ...place God at the center of things, ...which differs from the general assumption that we have to place the atmosphere at the center of things.

Or we place animals at the center of things. Or we place people at the center of things. We have to think in terms of God at the center in the creation and in the systems of his creation.

And in our persistent attempts to destroy that creation. So, as mentioned, the climate change debate directs our attention to one huge aspect of that.

But the case that I want to make is that the issue is actually more serious than that. So, now you may say, well, there's another doomsday prophet.

It's not intently doomsday prophecy. But it is a call to seriousness in our involvement in the issue.

So, what I'd like to then show you is a few images, which may or may not be very familiar to you.

[22 : 08] And for those who haven't brought their telescopes, I would have to describe something of this. By inviting the geographer to talk, you inevitably invite maps.

And last time, Sheila did such a nice map that she put me to shame. So, I hope to bring an even more colorful one. Now, this is a very controversial couple of maps, which show the full range of environments that have existed on our planet between 18,000 years before the present and today. The top map, as you see, has got an awful lot of white on it, which represents the extent of the continental ice sheets.

And you'll notice that Vancouver is having a bad time because we were under three kilometers of ice at this time. And, believe it or not, I mean, I don't want to spend the time proving that.

But let me just say this is the accepted picture. The UK was also in a bad shape. A little bit of whales were sticking out from below the ice sheet.

[23 : 35] England was in, you know, very tall. Scotland was in Scotland. Scandinavia was just totally, totally, totally, blocked out. And, of course, this was a time when the average temperature of the globe is estimated at being about 6.5 degrees.

Well, that's a subtle detail. Six degrees or so lower than at present. Then, this would be... Now, the other tricky thing about the map is that it represents different dates for different parts of the world. Because the maximum extent of these ice sheets differed from one location to another at different times. So, for example, our situation here appears to have been at maximum ice cover 14,500 years ago.

Whereas in the central part of Scandinavia, it was about 18,000 years ago. So, this is not an exact representation of a particular date.

But it is a time at which the ice was at its maximum. And this is how far the ice extended. Now, what is perhaps less commonly thought about is the fact that the whole of the area between Sumatra, Malaysia, Java, Borneo, was actually covered...

[25 : 11] was actually dry land. As a result of all the water that was extracted from the oceans, locked up in the ice sheets, so you had a much lower ocean level.

And so, at this time, anthropoids were walking across from Australia to Papua New Guinea, not having to swim. People were able to walk from southern England to France.

I don't know why they would, but... They had dry land available. You would also find that, and this is interesting in the context of flood, that the whole of the Black Sea was a very much different state than at the present time.

It was quite smaller. Then, of course, all the climatic belts were concentrated in such a way that they were much more narrow in their north-south extent.

And so, all I'm trying to illustrate here is that the environment, God's created environment, is enormously rich, enormously fruitful, producing, and is able to respond to a wide range of external constraints.

[26 : 43] The lower map, which is the warmest time that there has been, around 6,000 to 8,000 years before the present.

This is relevant to the story about global warming at the present time. But, at this time, the details of the effect are not so obvious, but there was much more in the way of extensive desert conditions in

the Saharan and Central Asian region.

And the permafrost boundary was further north than it is at the present time. And that is estimated to represent a situation where the mean annual temperature of the globe was about 2 degrees warmer than the present.

So, this is all sounds like a very small range from 2 degrees warmer to 6 degrees cooler.

But you see the enormous change that's involved as a result of it. This all happened without the presence of greenhouse gas emissions.

[28 : 07] This all seems to have been a time when animals and animal-like things enjoyed a very successful survival.

Some were eliminated and some new animals and species emerged. But, on the whole, this is, in my estimation, is a useful context in which to think about the global warming debate.

Because there is evidence of considerable variation of the climate in the past. A considerable variation in the extent of the different parts of the environment, both human, organic, and also basic physical aspects.

So, that's one thing to think about. Is there a question on that before we go ahead? Is there any evidence that what people did, in contrast to today talking about greenhouse gases, had an effect on those changes that you were mentioning?

Well, there were, of course, anthropoids at this time. And there were hollow sapiens, who was quite active in the 8 to 6 thousand years before present.

[29 : 44] And there are, of course, very important pieces of evidence of cultures that thrived and also collapsed during these times.

So, there have been... Those of you who have read Jared Diamond's book Collapse will be very familiar with the range of cultures that have disappeared.

And our interpreters having disappeared on the basis of their inability to respond to the changing environmental conditions. But was the population anything like it was today?

No, no, no. It was a tiny population. So, the effect was less? The effect was much less, yeah. But what you have is groups of tens of thousands, hundreds of thousands at most.

Total world population might have been as much as 500 thousand at this more recent time. When you think that it was 3 billion when I was in school, and 6 and a half billion now, this is a very small population.

[30 : 59] And would people have been a more nomadic tribe like people back then? Yeah. And they were hunters and gathers and bears, wondering about it. And so they were very close to the earth.

And they responded very directly to the changes. But anyway, that's a perspective which I think it's important for Sunoga, the details you don't need to worry about.

And it's a, in my view, you see, it's a little bit of a thought aside, but I was thinking this morning in this reading, you can actually see this. Here's a clear interpretation of what is happening through the fire, through the earthquake, through the whole imagery that's involved of God being in control. He has the whole world in this charge. And he is bringing this covenant into pain in order to rescue not just you and me, but the whole creation.

And so I think that we have a, we have a, a temporal component here which wasn't known about a few years ago, and which still has lots of questions surrounding it, as many of you all know.

[32 : 15] Nevertheless, it's important in talking with people about the issue to get some sense of what the standard understanding may be.

Let's move on for a moment. Well, those of you who haven't brought your telescopes will find even more difficult with this one. But it's a, it's a record of agricultural expansion over the course of the period from 1700 to the late, 20th century.

The top map is a map of what the vegetation regions of the earth should look like in the absence of people.

And so you will see that there's certain belts in which agriculture is, is certain intensive type is possible. And in 1700, it's hardly, it's hardly noticeable except in India and in China.

So between 1700 and now you see the, of course the, the North American bread basket, the whole of the expansion of European agriculture, the whole of the, well, further intensification of course of India and China.

[33 : 35] But now there's a massive, a massive effect which has absolutely nothing whatsoever to do with climate. So at this, at this level, not to suggest that agriculture is bad, and far beyond the suggestion.

But there are certain ways in which we have over exhausted God's good riches.

The soil in 15% of the earth's surface has been destroyed without possible renewal. I say without possible renewal, except if you think in terms of 10,000 to the time scale.

It could be renewed through that sort of time scale. But at this point we've successfully destroyed 15% of the soil that nourishes any kind of agriculture.

So just to, so the, the only point about this is to say, here are the, quote, natural biomes, or vegetation complexes, and here is the progressive effect of agricultural overproduction.

[34 : 51] Now there's nothing terribly remarkable about this. It's a city called Kunming in Yulan, an image taken from space.

And all the red color is agricultural activity. All the light blue or gray, whichever color you can see in here, is the city of Kunming.

And, uh, on the, it's a very mountainous part of the world, it's a very beautiful part of the world. But I bring it to your attention because it's a massive, a massive change in a very unstable environment. Those, uh, people living in Kunming are constantly exposed to major debris flows, major problems with respect to the, uh, loss of their fields, crops.

They, they, they wouldn't back in again very quickly, but it's, uh, it's a result of the intensive occupation. All the red spots and the sort of light blue-gray areas are intensively utilized by, by people.

[36 : 03] And then the brown and the gray parts, and the green parts are, uh, are relatively unspoiled. But you, what you're looking at is, is again, some kind of a change in the environment, which has nothing whatsoever to do with climate change.

And from the perspective of our situation here in Vancouver, this is a very important kind of lesson. Because we're in a very comfortable position, eating up all the available, uh, unspoiled land, and over-developing, uh, uh, overly intensely developing some of the area surrounding Vancouver, which has to be some of the most beautiful terrain in the world.

This is another image taken from space, which focuses on a large dam on the so-called Langkang River. It's a, upper, upper tributary of the Mekong.

And this is still in the Yunnan in China. And what you see is the very large reservoir that is backed up behind it.

Fifty-five percent of the major rivers in the world have been dammed. Uh, again, the statement is not one of saying that dams are wrong.

[37 : 31] But this extent of damming is absolutely extraordinary. And, uh, it's a largely result of what we carried out through World Bank funding during the 1980s and 1990s.

And it's a massive impact on the, on the, the world scene. Now, because what happens is, of course, that the, the rivers downstream of the, the dams are, uh, deprived of the sediment that normally, uh, is provided.

And upstream, there is a considerable amount of flooding, particularly in third world countries, where millions of people are displaced. And you've probably read about the, the three gorges, and, and the number of people displaced in that context.

Massive changes which have, again, zero to do with climate change. So, I may be over labouring this, but, I just, I hope you can see the point. By the way, these, these images, uh, approximately 20 kilometers on the side.

So, here's a river in Java. I can't pronounce the name, but it's flowing off into the Indian Ocean.

Actually, it should be the other way around, because this is flowing north to south.

[38 : 50] But you can see the extent to which the agricultural activity on the sides of volcanoes in Indonesia, is, uh, massively removing the topsoil, and essentially, going off to sea.

Again, this is a, an example of something that's completely unrelated to climate change. One of the implications of the intensive agricultural activity in North America, and I'm afraid we have to include Canada, partially responsible here, but only just a little, a little, a little bit off.

But you see that all the agricultural activity that's going on in the, in the Midwest, uh, eventually has some impact on what comes out at the bottom end in New Orleans.

And, uh, there's what is called a dead zone, off here in the Gulf of Mexico, uh, which is so full of nitrates, and also phosphates from industrial sources, which are primarily from the Ohio river system, that it is totally unlivable, and, uh, essentially is slime.

And the whole, uh, of the, the rich heritage of God's creation, which was exploited in terms of the extraordinary activity, and the agricultural production, uh, is, uh, is now no longer available.

[40 : 27] So it's a, it's a, again, zero to do with fire. This is a village in Japan, which, uh, regularly gets destroyed.

I don't know whether you have read anything about it, that debris flows in Japan, but anyway, this is, you see here's the settlement, and here are the fields, associated with that settlement.

And this is a, this is actually a fan, and the, and the creek comes out in this fashion. And, very so often, this happens, and you see the, the settlement is now under mud, and the fields have been destroyed, although they will rise again because of the, the, uh, the new acquisition of, uh, fine material.

But, not only is the village destroyed, but you see the landscape is now torn up, in a way which is really quite, uh, awful.

Again, nothing to do with climate change, and, uh, I guess I hope you've got the point. And here, of course, in our own, uh, immediate backyard, is the twin, is the, the, uh, Twin Sisters range, just, uh, south of Mount Baker.

[41 : 48] And you can see the extent to which, uh, we have treated disrespectfully, uh, God's creation. Now, there's a lot more detail to this that's, uh, it's, uh, worth looking at.

But, effectively, this area, which is the high, uh, subalpine range, has never recovered. This, of course, further down, does recover, and provides renewed forest resources, uh, over time.

But again, massive changes in this, this way. And finally, just to, to make the point that urban, uh, developments are so extraordinary, as to, to really make, uh, a few other effects relatively minor, here are the, the big cities in 1700.

And they're all confined to the Eurasian continent. And here are the big cities, well, that's 1985, it's ten times as bad today, in terms of the intensity with which, uh, we are occupying, uh, the land.

And so, these are, these are just some images, which I bring to you, because of what I feel is the narrow scope of the climate change event.

[43 : 13] And, uh, that, of course, climate change is important. But, we seem to have forgotten some of the things which we knew about 50 years ago. And the direct, uh, impact of physical extraction of the resources of the, of the Earth, that constitute, in my view, a much longer term, uh, spoiling of, uh, of God's creation.

So, I see that we are moving towards a climax, which will be next week. Uh, yeah. But the, important point here is, if, if you check the, uh, the Night of the Sun, or the province, or if you're more sophisticated, the New York Times, um, even more sophisticated, what else would that mean?

The, the nature of the discussion is narrowly focused on the effects of change in climate. The, important design is, there's the whole world of change that is going on around us, to which Christians should have, it seems to me, some commentary, uh, that is informed, and that is pointing to a God who is concerned about this.

A God who is actually involved with his creation in this whole process of change.

And the extent to which we ignore that is a source of very serious potential damage to our community. So, what I'd like to close with, uh, is, uh, a few straight comments about, the range of perspectives, that have been brought in through the day.

[45 : 17] And, uh, let me use this electronic device to, uh, to the strategy.

So, Carl Gore has, uh, told us that climate change is the defining issue, uh, of our generation. He received the Nobel Prize for 2007, in the basis of his exceptional book and cinematic production, The Inconvenient Truth, which he declares that global warming is indeed the number one problem facing command in the world.

I agree that it is a problem, and it was a big problem, but I don't believe that it is the number one problem facing command. There are a whole host of others.

And along came Bjorn Lomborg, a Danish economist, who, uh, wrote a book called The Skeptical Environmentalist, in 2001, and this year has produced a new book called Cool It!

[46 : 51] The Skeptical Environmentalist died to global warming. Bjorn Lomborg is an economist who collected twelve leading economists from around the world, sat them down over some nice meals in Copenhagen, and, uh, they discussed what the major problems of the world were, and, uh, they came up with a list of fifteen.

And, uh, none of these, none of these actually included any environmental problems. Could you guess what they were? Well, they're all economic.

So you might say, well, we've got 1,200 climate scientists who say that climate is the problem. You've got twelve economists who say that economic problems are the worst.

And, alongside of this, we have, uh, James Inhofer, who may have worked. Chairman of the Environment and Public Works Committee of the United States Senate, who says it's all nonsense anyway.

Someone like Sir James Lovelock, declares that we've already faithfully unbalanced the delicate mechanisms controlling the Earth, and it's all over for the human species.

[48 : 19] Uh, Arnold Schwarzenegger has decided to terminate climate change single-handedly.

And Arnold Campbell, our own premier, puts his trust in Mr. Schwarzenegger. There's such a range of, uh, of contrary positions on this topic, and it's very important that we try to see a more balanced and, uh, more broad-scale assessment of the nature of this distraction.

So that's my, uh, that's my introduction. I hope that we can draw some directly practical lessons, uh, out of the implications of this distraction next time.

Thank you. Thank you. Thank you. Thank you. Thank you.

Thank you. Thank you. Thank you. Thank you. So. The, uh, reference in the book of Revelation, uh, to water being damaged, air being damaged, and the land being damaged, comes to one-third.

[49 : 42] It actually specifies, uh, a third of the air, a third of the water, a third of the land would be, uh, poisoned. Mm-hmm. Spoiled, I guess. Yes. Yep.

As the planet is covered in, it's covered 70% in water, um, the only possible occupation that we could have is 30%.

So a third of that is 10% of the planet. Now, I haven't thought about this, by the way, but it just occurred to me, just a memory thing that I remember what Revelation does say.

Um, has anybody, uh, mentioned that at all in any of the writings that you've, uh... Yeah, the old apprenticeship has a very, very good discussion on, on Revelation.

And, of course, the classic is the 20th, chapter 22, in which the, uh, the, the, the waters of the river run crystal clear in the, uh, in the renewed information.

[50 : 51] And so, um, I think that, uh, I haven't, I haven't seen the calculation that you just, uh, I'll look forward to it. I'll look forward to it. Yeah. Yes, uh... I find what Bill was saying somewhat discouraging in the sense that you have also told us that 15% of the outer land, uh, is alone done for.

Uh, so we're over our 10% Bill. Oh, right. It's scary. Well, isn't it just, uh, a reflection of the, the, uh, persistence of evil, uh, in the broadest sense?

Um, it seems to me that, uh, Bill Rees, who, uh, is the originator of the ecological footprint idea, has made the comment that we are genetically faulted, which I know.

That, uh, we're genetically faulted to, to over consume. And that there's, uh, what he is saying is the closest thing I've heard from a secular, uh, scientist to being a statement of, uh, uh, of total neutrality.

Mm-hmm. And, uh, if, uh, there's this tendency for us to do the wrong thing, uh, then we should not be surprised. That, uh, there's this segregation that we're going.

[52 : 24] Thank you. Will you be speaking next week to, um, the issue of how we establish priorities as we see?

Yeah. That's a tough question. There's one? Yeah, sorry. Yeah. So, I was just going to, um, sort of make the comments. I mean, I think, um, what, whether the word distraction is really quite the appropriate one, um, uh, actually being intentional with the volatility.

So, like, bring the crowd to say. Yes. I mean, what you're saying is, um, it seems to me that our problem is much bigger than just climate change. I mean, to, to, to move it into a sort of, just a sort of analogy of a, first, I'll imagine a man whose life is a complete disaster, he drinks a bottle of whiskey a day, he's invested in his employer, he eats this wine, he's lent money to a loan shark, you know, everything is going wrong.

And he goes to the doctor and the doctor says, um, you know, if you carry on drinking like this, you're going to get it, your liver is going to give out within six months. And you're saying, well, the doctor's report is a distraction, really.

No. Uh, he is, you know, his problems are much worse than just the whiskey. Yeah. Um, and I think that, you know, that's, I mean, of course, that's true, his problems are much worse, but nevertheless, the whiskey may be the most depressing and immediate problem.

[53 : 46] It's a good observation. Did anybody hear it at the back? No. The statement is that the man who is in an alcoholic stupor, and who is told by his doctor that he's going to die within six months if he doesn't give up his alcohol habit, should be happy with that partial diagnosis, even though his problems are far greater.

So he's saying that my attempt to divert attention from the climate change problem is a similar kind of diversion. Now, I do accept the point that the word distraction may not be the right one.

But I think the question implies that I believe that the climate disaster is as immediate as is suggested.

Okay, right. My view is that the disasters are rather more immediate in the context of, you know, only the soil, but also the animal life and the vegetation, which of course is partly affected by climate also.

The trick is that if you go up on a limb and say it's climate, or it's land, or it's water, it seems to me that you are missing the fact that they are really all interrelated.

[55 : 28] And so one is in danger in giving a talk like this that I'm doing, and one is in danger of being misinterpreted so that climate change is not important. It is important.

Of course it is. And we need to take very serious attention to it. But it is part of the bigger picture. Yes, where do I have that?

I absolutely support your thesis that climate change is not the perhaps the biggest issue of the immediate ones or the immediate environment.

And the climate change debate, though, I sense there's a much less agreeable unanimity of the scientists themselves, like those in the IPCC who have said the data is correct, but the interpretation is greatly flawed.

In fact, that so many, and I don't know the numbers, and many say that the climate change is real, but the human effect is a question of the models of poor and everything else.

[56 : 37] Could you comment on that? Well, thanks for that comment. I've skirted around that issue because it's another level of complexity that is tricky. There is disagreement amongst scholars, and it's not just by people who pay by the old companies.

It's serious-minded disagreements. No one of any substance doubts that there's climate change. Climate change is with us all the time, and has been, and is continually through the geological record. But there is a legitimate debate about the role of people and the role of carbon dioxide. It's the Donnan view that carbon dioxide is causing temperature change. This does not jive with some of the record in which it shows that temperature increases first, and carbon dioxide increases afterwards.

If that's the case, then there is a serious issue here. There's also a serious question about the role of water vapour, which is by far the biggest greenhouse gas in the atmosphere, and which does not participate in the same process.

[58 : 11] So, yeah, there's a general... And, of course, to go even further, the astrophysicists and the cosmologists who feel that most of this is expectable through changing output from the sun, and that we just have to wait a little while, and the cycle will reverse itself.

There's a heavy duty discussion on that. But my concern in some of those things is that they will just delay action indefinitely.

And I think that... Well, the argument is that we cannot possibly afford to put all this effort into climate change if we don't know that the real culprit is carbon dioxide, plus methane, plus nitrous oxide.

And it seems to me that that's the issue where the precautionary principle becomes important. So, how probable is it that we assume that our causal?

On your first map that you had up of showing, I think, 18,000 years, and this recently at 6,000 years, there's quite a change in temperature, which would not be attributed to population.

[59 : 39] Have we learned anything about what caused that, that we could apply in our present situation? Well, there are these cycles, which are quite well documented, which have a frequency of very long occurrence in the book.

They come down to as little as 20,000 years. So, kind of a... This is a function of the geometry of the relationship between the Earth and the Sun.

That is something that we know. But it doesn't cut the... It doesn't cut the eyes when you look at some of the rapid changes that have been occurring in the last 15,000 years.

which was actually the process of legalization and the... ...the integration of the... ...the integration of the... ...the integration of the commence. Showed changes over a course of decades.

Massive change of the order of two, three, four degrees average temperature change. Over a course of three decades. Now that...

[60 : 48] That was... Not predicted. Hasn't been... Explained in... ...any detail. It occurred entirely without the help of people.

And, uh... So... So that's one of the elements which, uh... ...is part of the doomsday, uh... ...is part of the picture.

People are saying they don't understand these very rapid changes. And, uh... So a way to read... ...is a... I'm gonna bring a... ...a reading list next time.

For those who... ...don't know what to read. There's a... ...a new book by a man called Paul Brown... ...called Global Warning... ...the Last Chance for Change.

And that... He emphasizes this... ...this... ...serious rapid change. There are some indications, as you probably have read, that, uh...

[61 : 48] ...there's some extraordinary rapid acceleration in the... ...melting of Greenland, particularly south-eastern Greenland, and also... ...sitin parts of the...

...the, uh... ...most high shelf. And people are watching this very carefully because the... ...the idea is that... ...there's a feedback effect, positive feedback effect, which accelerates the process.

And this... ...this fact is not... ...incorporated... ...into any of the modeling which is... ...behind a great deal of the... ...these 7,500 pages of... ...where they don't...

...they don't actually address that. It seems to be... ...so unlikely... ...that there's more evidence to just... ...that has to be... ...helpful.

And that, of course, leads to... ...a change in sea level... ...um... ...which is significant... ...rather than... ...what is connected to... ...to the moment... ...is like... ...about a...

[62 : 44] ...an 80 centimeter... ...maximum... ...sea level change... ...by the... ...country perfect... ...will be converted into... ...a 6 meter... ...or 13 meter...

...sea level change... ...if those... ...green land and... ...the West Antarctic ice sheets... ...is like... ...is like... ...so there's a... ...there's an element of... ...of... ...of...

...ignorance... ...which... ...also lead to... ...accomit... ...but the... ...the main thing is that... ...no I'm in charge... ...and we don't need to...

...to worry... ...in terms of the... ...long term... ...outcome... ...of the process... ...and in the short term... ...and maybe... ...some big surprises... ...so... ...it seems to me that...

...some will point the finger at... ...the population... ...and say that that's... ...a major problem... ...um... ...um... ...in my attempt to... ...access whether that's... ...uh...

[63 : 43] ...something that we as Christians... ...should be concerned... ...about... ...I looked at the Bible... ...and... ...see what... ...God has to say about... ...population... ...and as far as I can tell... ...he almost... ...unanimously...

...suggest that... ...big population... ...is a good thing... ...are you aware... ...of any scriptures... ...that would... ...say the opposite... ...that God... ...would... ...encourage us... ...to control...

...of my... ...in the most... ...well... ...if we are to take care... ...of the earth... ...if we are to act... ...responsively... ...in relation to the... ...waters... ...and the air... ...and the earth...

...then... ...God has a very definite... ...perspective on that... ...he says yes... ...to take care... ...and by... ...accelerating the population... ...to such a... ...level as we have... ...I mean...

...it's quite extraordinary... ...to think that... ...in my lifetime... ...three billion people... ...have been added... ...to the total... ...it seems to me... ...very difficult...

[64 : 38] ...to see that as being... ...responsible... ...caring... ...because of the way... ...in which... ...that is just... ...what... ...seems to me... ...directly...

...attributable... ...to the... ...in... ...in... ...in... ...in... ...in... ...in... ...the... ...growth of the...

...children of Israel... ..the... ..growth of the people of God... ..into... ..a... ..community... ..that would be... ..able to... ..grow...
 ...and... ..flourish... ..to enjoy... ..the... ..benefits of... ..the... ..consecration... ..I don't... ..imagine that there's any... ..scripture that says... ..stop having children...
 ...but... ..there seems to me... ..to be very strong... ..indication of... ..the... ..in... ..and all its... ..in... ..in...
 [65 : 34] ...the... ..in... ..the... ..scripture... ..to ask... ..it... ..so... ..to... ..it... ..sees to me... ..not... ..quite fair to... ..Jorn Longborg... ..and... ..his fellow economists... ..and... ..my impression is... ..that... ..what they were doing... ..was saying... ..what...
 ...are... ..the... ..great... ..are... ..of... ..the... ..suffering... ..by... ..expending... ..of... ..a... ..moder... ..of... ..of... ..course... ..they came up with... ..waterborne diseases... ..mal... ..nutrition... ..ah... ..aids... ..perhaps...
 ...in... ..in... ..of... ..the... ..in... ..in... ..so... ..seems to me... ..what they were doing... ..was drawing attention... ..to the fact...
 [66 : 29] ...is our priority... ..the... ..of... ..humanity... ..and... ..its need... ..or is it... ..the prevention... ..of... ..global warming... ..which may not...
 ...in fact... ..be preventable... ..as you pointed out... ..maybe... ..it may... ..possibly... ..even... ..be part... ..of... ..unnatural... ..there's a very serious...
 ...underlying... ..ethical problem... ..here... ..is the environment... ..much as we deplore... ..devastation... ..is it... ..to be... ..primary...
 ...concerning... ..primary... ..ethical... ..concerning... ..or is it... ..people... ..excellent... ..thank you... ..the right in... ..taking the task... ..on that...
 ...the... ..the... ..the... ..I... ..I think the... ..the... ..only point I would make... ..is that it's... ..it's interesting that... ..the 15... ..priorities...
 [67 : 24] ...identified... ..did not... ..in... ..environmental... ..form... ..and... ..I think that... ..it's absolutely right... ..that there are important... ..issues... ..of...
 ...disease... ..and... ..and... ..one would have expected... ..somewhere in 15... ..the environment... ..maybe... ..maily it's... ..passed... ..being at refunds...
 ...do you think the idea of the... ..to stop the people being... ..somon put... ..FBI... ..after... ..of... ..one... ..possible mechanism...
 ...the..... worst ■■■■■■■■■■... ..■■■... ..just... ..wij... ..■■■ bien■■■... ..do... ..mem mug... ..mem■■■... should it be at the individual taxpayer should it be the industrial level should be at the government level it's on it's a good point I realized there's a talking about water levels that itself and dr. Packer in the though wetlands of southwestern dry I'm at about 600 feet so my property might be a little bit more valuable than yours I'll hear the introduction as I said build up you