

## Communicating about Climate Change

### **In fifteen words:**

Climate change is real, scientists agree, it's us, it's bad, there is hope, time's NOW!

### **Sample conversation with acquaintances:**

"So, have you heard of the latest report on climate change. It's so serious."

"No, I have heard nothing about it." (This is the most common response, sadly - and what we have to change.)

"The Intergovernmental Panel on Climate Change has just indicated that the impacts of climate change are WORSE than they expected. They are saying that we have to hold warming to 1.5 degrees above normal instead of 2 degrees because impacts are faster and stronger than they expected. And we are pretty much ignoring the issue which is going to lead to such economic turmoil from increased insurance costs and agricultural costs and stock market instability and migrations from floods and droughts will cause conflicts and that will affect economies and the sea level rise and storms and ... that there is a chance of complete civilization collapse between 2100 and 2150."

"I didn't know it was that bad." (Very common response.)

"The thing is that they say the effects are not linear. This means that it won't seem bad and then suddenly it will be too late to do anything. We are supposed to act before it gets that bad. And they have given us only 12 years before it will be sort of a crisis limit. They say we have to reduce global use of fossil fuels by 45% by 2030 - that's in 12 years!! And by 100% by 2050!

So my family has gotten together - because we know that we have to start talking about it with everyone so that we all act together. We met and decided on our family climate action plan."

"What are you going to do?"

"We have decided that it is now mostly about advocacy. We are all going to talk about it everywhere we go. If we can get everyone talking about it, maybe the government will begin acting on it according to the evidence. It is idiotic to not listen to the scientists - they are like the doctors of the planet. And I keep thinking of the children, we are destroying their future - it's criminal!

I can send you links and information - would you gather your family to talk about it?"

### **Sources (please add to this as you encounter better ones):**

We included: <https://xkcd.com/1732/> (a graphic representation of the situation with notes) and <https://medium.com/@parismarx/climate-change-is-a-class-issue-cd6c143d38f6> and <http://www.ipcc.ch/report/sr15/> (site with current official statement of latest scientific report for those experts out there - includes a summary and headlines if time is short).

## **FAQs:**

Why is it important to act now - even though I can't see anything to bad happening?

1. Unawareness of the non-linear rates of change of climate impacts - it will not appear to be a problem until it is past our ability to halt the effects.
  - a. Often people panic about things and scientists do some research and tell them not to worry (like with GMOs). In this case, as a science teacher, I hear screaming coming from my friends and a calm comfort from the science community. In the case of climate change, it's the opposite. The screaming is coming from the scientists and has been raising in crescendo over the last decade until I am feeling deafened and my friends and the media and all other aspects of society are radiating a bizarre and calm unconcern. In the past, the science community has been right - they landed us on the moon, they resolved diseases and made child-birth easier for me, they solved the ozone crisis and acid rain, they built this computer and that phone I am addicted to. I know that I am criminally stupid to ignore them now. The beginning levels of change do not seem scary and we can figure that they are just normal climate fluctuations if we only look at our own observations. But our observations are WRONG the level of screaming is terrifying and we have to LISTEN and ACT now!
  - b. When I say non-linear, it means that the line of change is a curve that is sloping upwards. It will seem normal and then it will be extreme in a few years.
  - c. Please read the transcript below to understand what I am saying.

Why is there too much carbon in the atmosphere? Why do fossil fuels matter so much?

1. Confusion about the problem of too much carbon in the atmosphere.
  - a. Most people know about the carbon cycle - all living things (well almost all) are made of carbon - plants and animals. Plants absorb it from the atmosphere as carbon dioxide and use light energy to convert it to carbon, releasing oxygen in the process. Animals get their carbon from what they ingest. Both animals and plants use some of their carbon to burn (adding oxygen to it) to stay warm and to move and the carbon is then released as carbon dioxide when they breathe. They also use some of it to build tissues and to thus grow bigger. Micro-organisms generally digest dead plant and animal bodies and return their carbon to the atmosphere as carbon dioxide.
  - b. To many people it seems impossible that humans could affect something so large as our planet. One of the things to consider is that we need the atmosphere for warmth and oxygen and protection from radiation. Oxygen has been explained above but the warmth comes because the sun sends energy to earth in high-energy forms (light and ultraviolet light and x-rays and gamma rays). Ultraviolet light rays are blocked by our ozone layer and the magnetic field blocks the x-rays and the gamma rays. When our earth is shiny and reflective (ice surfaces and snow) the light stays as light and leaves the earth again. But when the light hits non-reflective surfaces, it is turned into a lower form - heat - and this cannot escape as easily. The greenhouse gases make it even harder for this heat to escape. And generally, the carbon and water and methane (the most powerful greenhouse gases) in the atmosphere are used over and over again in a cycle - keeping their percentage in the atmosphere at an even level to trap in the heat.
  - c. What many people don't understand is that this atmosphere used to be very full of carbon dioxide and too hot for much life to form. It was only when tiny algae evolved and began to convert carbon dioxide to body structures that carbon dioxide was removed from the atmosphere. As these vast tracts of algae died, they floated to the bottom of the giant oceans

and were not degraded by microorganisms - they were just buried. This trapped this carbon in the ground and it became unavailable for trapping heat - which was a good thing as the earth cooled to reasonable temperatures (like around 13 degrees Celsius).

- d. And, when we discovered these layers of fossils rich in carbon at the beginning of the industrial era - we began burning them and returning that carbon to the atmosphere. Now we are at a global average of near 14 degrees Celsius and we are being told by the experts that we don't want to get to 14.5 and all life is likely to die if we get to 18 degrees because we are stupid enough to burn it all.

I thought scientists were just scamming us. Why should we trust them?

1. Misconceptions about science that leads to a devaluing of evidence-based conclusions.
  - a. Frequently in human history, knowledge was controlled by those in power - either the religious leaders or government or both. This hindered progress in learning about how the universe worked. A breakthrough came when a community of people began to value evidence-based reasoning and the truth that this uncovers over political influence or wealth. An established system came forward that has proved very durable at resisting corruption.
    - i. Scientists gain influence and prestige and the wealth that comes from this by publishing their work in peer-reviewed journals. They lose wealth and influence if they are ever caught falsifying data.
    - ii. Peer-reviewed journals gain wealth by selling subscriptions - but these are only of value if the journal is perceived to be trustworthy. A journal that publishes a false report will soon lose its credibility. It is incumbent on the journals to ensure the work being published is accurate. Often, the journals are international and the peers are funded by entirely different organizations.
  - b. Although there will be errors, they will eventually be caught if they are going to be of any value to society (they will be tested rigorously and used around the world).
  - c. Exposure to errors in two fields of science that the public encounters easily can make it look like science is untrustworthy. In medical science decisions are made on the best available data and this changes as it is checked and rechecked - so it frequently appears to be in flexible. And businesses will also report that something is 'scientific' or use a lot of data that they have selected to support their product - data that is eventually seen to be biased - and this also makes science look like it is untrustworthy. Neither of these are the deep science that underlies climate change.

Humans can't really impact the environment. Only God can. Why should Christians care?

Explanation about the Anthropocene: <https://theanthropocene.org/film/> (this is the trailer for the movie) <https://www.smithsonianmag.com/videos/category/science/what-is-the-anthropocene/> (definition) <https://ago.ca/events/anthropocene-human-epoch> (current exhibit in Art Gallery of Ontario)

We are called to justice and this is a justice issue.

Since most Christians believe that God made the world, they can assume that He will care deeply about how we use or misuse it.

God does speak to creation care in verses like Genesis 1:26-28 and Leviticus 25:1-7 where he demands that we be responsible for the resources He has given us, even to the extent of allowing the environment to have a sabbath rest, once in every seven years! "Don't selfishly exhaust what I have

given you.”!’

Religious people should be deeply concerned for the environment as stewards of God’s wonderful creation. Instead they too often see creation as a resource to be used and even abused. They dismiss scientific evidence about climate change because it conflicts with their view of biblical truth, rather than doing the hard work of thoughtfully exploring and reconciling truth through both science and theology. Where evidence that poor stewardship of creation is resulting in destruction of the environment and suffering for millions of people, religious people too often build walls to protect themselves or abdicate their responsibility in a theological fatalism that sees the world going up in smoke anyway so it doesn’t matter. Instead of using their prosperity sacrificially to be a blessing for their neighbours, they exacerbate the problem by selfish consumption. We long for a day when religious people of all faiths are at the forefront of the movement to renew our planet.

I can’t afford to change. Carbon taxes are just money grabs. Why would I care?

Citizen’s Climate Lobby resources clarify this - it is very supported by the science and it should include a dividend that returns money to households to offset costs for poor and stimulate the economy:

<https://canada.citizensclimatelobby.org/volunteer-resources/>