



The Parish of St. Mary York

Faith in Action

Building hope for tomorrow in the face of climate change

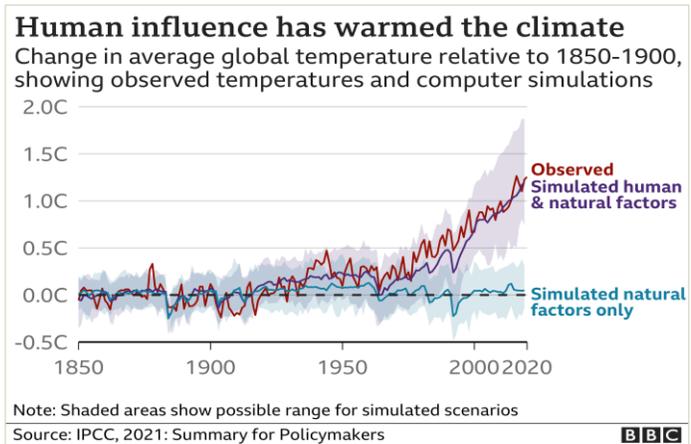
The Science of Climate Change

Guest author: Mike Howe

The earth has gone through alternating periods of accelerated warming and cooling over the past 4.6 billion years. Ice core samples, trees, coral, and rocks all provide us with forensic evidence that such changes have been occurring since earth's creation.

So why are we so concerned now when these changes have been occurring since the beginning of time? The fact is that the earth's "global temperature" has been rising at an accelerated rate since the advent of the use of fossil fuels (coal, oil and gas) to support the Industrial Revolution in the 1700s. This is caused by increased levels of pollutants, primarily carbon dioxide, introduced into the atmosphere from fossil fuel combustion.

Carbon dioxide has the ability to absorb and re-emit infra-red radiation, which in turn warms the lower atmosphere (similar to a greenhouse). Carbon dioxide has resulted in a global temperature increase of approximately 1°C with over half occurring since the mid 1970's². This has been confirmed through observations such as ice core evaluations, surface observations and satellite measurements.



Temperature increases in the past were driven by naturally occurring volcanic activity, changes to the earth's orbit around the sun and other natural causes. But this is not currently the case.

Many countries, including Canada, have signed the Paris Agreement, an international agreement on climate change, whose objective is to cap global warming at 1.5°C³. This temperature is considered to be "the point of no return" or irreversible. Climate simulations, to-date, have been exceptionally accurate with the temperature forecast. If global action is not successful, earth's "thermometer" will cross the 1.5°C threshold in the 2040's if not sooner!

In my next article we will have a look at the global impact of climate change and what we can likely expect over the coming years.