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Alan Betts

The Weekly Planet

## Climate limits are closing in

Yesterday was an international day of climate action. Thousands of actions in over 150 countries around the world were sponsored by 350.org. This group is trying to spread awareness that an atmospheric carbon dioxide concentration above a threshold of 350 parts per million (ppm) will have a dangerous impact on the Earth's climate.

Back in June 1992, 154 nations — including the United States — signed the United Nations Framework Convention on Climate Change to limit greenhouse gas emissions and prevent "dangerous anthropogenic interference with the Earth's climate system." But turning this agreement into a practical global reality has been difficult.

Several countries have since agreed to limit the average long-term warming of the Earth to 2 C (3.6 F). However, the Earth's climate system is very complex, so it is hard to determine exactly how much CO<sub>2</sub> we can put in the air and still meet this goal. From geological records though the ice ages, we can estimate the CO<sub>2</sub> concentration when global sea levels rise 5 to 10 feet from the melting of ice. With this approach we arrive at the low CO<sub>2</sub> threshold of only 350 ppm. Unfortunately CO<sub>2</sub> in the atmosphere has been rising at about 2 ppm per year and has already passed 385 ppm.

So as readers of these Weekly Planet columns know, our global civilization is on a path to a profound climate crisis. Even with all the commitments that nations have so far made to reduce the emissions of greenhouse gases, especially CO<sub>2</sub>, our best estimate is that the earth will warm on average 7 degrees F by the end of this century — with larger temperature rises over land. On this path, the damage to the earth's ecosystems, on land and in the oceans, will be devastating. In fact, humanity is so dependent on the earth for food that our society could simply unravel. Melting ice will flood our coastal cities, and sea levels will keep rising for centuries to come.

There is still time to reduce this global warming in half to "only" about 3.6 degrees F by the end of this century. Even this will take a large shift in our attitudes here in the United States and a serious commitment to global security. It is unlikely we will get anything like the commitments we really need at this December's climate conference in Copenhagen — but perhaps we will get a consensus on the first steps.

Changing direction away from fossil fuels as our main energy source and reducing our huge consumption of energy represent a big transition for our country and for the industrial world. There is a lot of resistance. People, businesses and politicians wish to avoid accepting responsibility for the transformation of our planet that is being driven by modern industrial society. There is a widespread belief that limits are unnecessary or simply unacceptable. This may be a relic of the old frontier ethic on which the United States was built. But whether we like it or not, we have reached limits in many areas.

Our nation grew rich burning cheap fossil fuel for energy, so now our population has high energy demands. The boom is ending, but the transition to using energy efficiently and replacing fossil fuels with renewable sources of energy will not be easy. Add insulation and button up your house for the winter to reduce the energy you'll need for heating. You will gain comfort and security against rising fuel prices — and you will be contributing to the security of our Earth. It may seem remarkable that there is a link between our actions and the future of our planet, but we are all interconnected.

Alan Betts is Vermont's leading climate scientist and a past president of the Vermont Academy of Science and Engineering. He lives in Pittsford and can be reached at [VTclimatescience@aol.com](mailto:VTclimatescience@aol.com).

ON THE NET

United Nations Climate Change Conference

<http://en.cop15.dk/>

Oct. 24, 2009: International day of climate action

[www.350.org/](http://www.350.org/)