

Young People's Burden: Averting Climate Disaster*

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1. I'm Sophie Kivlehan from Pennsylvania, the United States. I will first show a few minutes of a speech given by 12-year-old Severn Cullis-Suzuki 25 years ago at the 1st Rio Earth Summit. A plea to adults to take actions to avoid dangerous climate change.

Then my grandfather and I will take an objective look at the response of the world to her plea.

I will make my own plea to today's adults, but I will argue that young people must do more than plea, we must demand our rights.

2. 2.5 Minute Video of Severn's talk (Powerpoints including video available on [JEH website](#))

3. Sophie: Yes, make your actions reflect your words.

Have actions reflected the words? The promise to avoid dangerous climate change?

Sophie: Fig. A1. Let's look at the data. All nations agreed to the Kyoto Protocol in 1997.

In the 25 years leading up to the 1997 Kyoto Protocol emissions increased 1.5 percent per year.

But after 1997 emissions continued to increase – even faster than before! The graph on the right has a linear scale, so you see easily, the rapid emissions growth.

Jim: Fig. 1. Emissions from mature economies stabilized. But they had already stabilized by 1980. And there is no indication that the 1997 Kyoto Protocol had a substantial effect.

Emissions from the developing world continue to increase as these countries try to raise their standards of living, as they have every right to do. China's emissions may be stabilizing now, because they are becoming a mature economy and are trying to limit air pollution from coal.

Sophie: Fig. 2. Because of these increasing greenhouse gases, global temperature is rising. Today global temperature is more than 1 degree Celsius warmer than its preindustrial level.

Sophie: Fig. 3. How high can we let temperature rise? Our best guide is Earth's history.

In the Holocene, the past 11,000 years, the period in which civilization developed, maximum temperature was only one-half degree Celsius warmer than preindustrial.

Now temperature is far above the preindustrial Holocene. It is now close to that in the Eemian period 120,000 years ago, when sea level reached 6-to-9 meters, 20-to-30 feet, higher than today.

Jim: Fig. 8. Why has temperature increased almost linearly since 1975? Because Earth is out of energy balance, more energy coming in than going out. Earth stays out of balance because since 1975 we have kept adding gases that increase climate forcing about 0.04 W/m² every year. That will be 4 watts in 100 years, equivalent to doubled CO₂, 3°C global warming, enough to guarantee disastrous climate change, loss of all coastal cities.

So IPCC defined a new scenario, RCP2.6 which we have shown is equivalent to reducing emissions 3% per year. Such reduced emissions limit global warming to 1.5°C, if we also extract, at minimum, 100 GtC from the air via improved agricultural and forestry practices.

Sophie: Climate Forcing. Now let's look carefully at what is happening in the real world.

We see that the real world, the top of the red line, is already diverging away from RCP2.6.

Sophie: Climate Forcing Gap. How important is the gap? Couldn't we just extract some CO₂ from the air to close the gap?

Sure. The gap of 0.013 W/m² is exactly the reduction of climate forcing that occurs if we reduce atmospheric CO₂ by 1 part per million. 1 ppm CO₂ is 2 GtC, 2 billion tons of carbon.

However, to reduce atmospheric CO₂ by 2 GtC, we must extract 4 GtC from the air, because of the equilibrium that exists between atmospheric CO₂, ocean CO₂ and soil and biosphere CO₂.

The cost, at the optimistic rate of \$150 per ton of carbon, is \$600 billion, but \$1.4 trillion at \$350/ton. This cost, about a trillion dollars, is for one year! And the gap is growing each year!

Adults claim that they are doing something about climate. But look what a mess they leave for young people! They are not slowing down the climate freight train by one iota, not by one bit!

As I stand here, 25 years after the first Rio Earth Summit, the words that 12-year-old Severn Cullis-Suzuki spoke should still ring in the ears of government officials. But do our governments really care about her concerns? Or do they care more about deals with the fossil fuel industry?

Fears expressed by this young girl are coming true. Species are disappearing. Coral reefs are bleaching. Their life is disappearing. Droughts become stronger and fires are raging, driving refugees and increasing conflict among people. Storms become stronger and floods more devastating. Ice sheets are melting. We debate whether we will lose coastal cities in 150 years, or 100 years or 50 years. Do adults wonder why young people have increased anxiety today?

Severn spoke directly to the delegates at Rio. A few of them sat up and took notice. How long did it affect their conscience? More important, did it affect their government's actions? No.

If I spoke before the delegates today I would feel the same fear and anger that she expressed. And more, because I can see the hypocrisy of our governments, of our leaders. In truth, for all their posturing, they have accomplished painfully little to avert the onset of catastrophic climate change. Money has been shown to be more important than their children's future.

I am afraid and angry at the problems that greedy and foolish adults have created. But, just as Severn said, in my anger, I am not blind. And in my fear, I am not afraid of telling them ALL – diplomats, negotiators, leaders of government, banks and businesses – how I feel.

Adults, you say that you love us. But I challenge you to make your actions reflect your words. Without hesitation. Without consideration of profit. Instead caring about what is most important – the lives of your children. If you continue to pursue selfish aims, the result will be enormous suffering by your children. And no amount of money will save even the wealthiest children. Because money is, at its root, a fiction, and will disappear rapidly in the world you are leading us toward. I hope that you are listening, and I thank you for letting these words into your heart.

However, I must also say that we young people must not rely only on hopes that you might listen. Young people are people. We have rights. And we can fight for them.

Along with 20 other young people and my grandfather I am a plaintiff in a lawsuit filed by Our Children's Trust against President Trump and the United States government for violating our Constitutional rights to life, liberty and property.

We still live in a nation of laws. I believe that our courts will find in our favor and require the government to develop and carry out a plan to reduce fossil fuel emissions.

But will it be too late? There is such a thing as being too late.

Pipeline. I encourage more young people to stand up for their rights. Just a few days ago this group in Minnesota was granted intervenor status, as they fight to stop a new tar sands pipeline. These young people are standing up to fight on their own, without money, without a lawyer.

Tar Sands. Meanwhile, what are adults doing? Making money. Developing the dirtiest carbon on Earth: tar sands, tar shale, and hydrofracking. Leaving the mess for young people to clean up.

They even leave us the tab. A trillion dollars here, a trillion dollars there. Where can we find it?

We must fight for our rights now, before it is too late. Thank you for listening and supporting us.

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*Powerpoints available under Presentations at www.columbia.edu/~jeh1