

Global warming will be our lasting legacy, states David Archer in *The Long Thaw*, for humans a changing Earth's climate for unimaginable time-spans. The impact of releasing fossil-fuel CO₂ into the atmosphere will last "far longer than the age of human civilization so far," he writes; for each ton of coal we burn, "The CO₂ coming from a quarter of that ton will still be affecting the climate one thousand years from now," and "About 10% of the CO₂ from that coal will still be affecting the climate in one hundred thousand years." Already fossil-fuel consumption has raised temperatures around the globe, Archer notes, to extents not seen in "tens of millions of years, long before the evolution of our species." He terms it "the most severe change since the Cretaceous / Tertiary boundary 65 million years ago that brought a close to the 150-million-year era of the dinosaurs." Today's changes are highly evident in the Arctic where glaciers and ice sheets recede at alarming rates, contributing to a sea level rise that's projected to inundate not only Pacific islands but also vast stretches of US coasts, east and west, in less than a hundred years.

I support 350.org, an organization founded by Bill McKibben, a professor at Middlebury College in Vermont and author of a dozen books that detail human practices affecting the natural environment. "350" refers to the parts per million of CO₂ in the atmosphere that's considered safe for life to continue into the foreseeable future. We are currently at 392ppm. Hence, 350.org fosters climate education and awareness even as it seeks to find solutions to the crisis. In this spirit, I responded to 350.org's Climate Impacts Day of May 5, joining hands with organizers around the globe, Afghanistan to Zimbabwe.

In Wyoming, two such events were held: "Climate Education and Solutions" on the campus of WYO University in Laramie and my own "Connect the Dots on Climate Impacts Day" at Laramie County Library in Cheyenne. At the latter, we held a roundtable discussion with Mark Stege, Vice President of Cheyenne Light Fuel & Power; Sharon Fain, the representative of Cheyenne Light's Community Relations who is also Vice President of the Laramie County Library Foundation; Shane Smith, Director of Cheyenne Botanic Gardens; John Corra, Director of Wyoming's Department of Environmental Quality.

Mr. Stege presented slides detailing his company's efforts to produce electricity with reduced carbon footprint. A gas-fueled power plant near Cheyenne is in the permitting process, and Black Hills Corp, Cheyenne Light's parent company, plans to retire three coal-fired plants by 2014: Ben French, Neil Simpson 1, and Osage. On the other hand, one of Mr. Stege's charts disturbingly showed that nationwide consumption of coal is projected to rise into 2035.

With help from Ms. Fain I showed 350.org slides that detail recent severe weather events: Slides 20 and 21 discussed the destructive tornados in February 2012 that numbered 57, nearly twice the 1991-2010 average; at the same time, last year was the driest on record in Texas, where wildfires destroyed half a billion trees. Slide 5 showed the 2010 all-time extreme heat records suffered by residents of 19 nations around the globe; Pakistan registered an unbelievable 128.3 degrees F. Slide 4 detailed the 2011 extraordinarily heavy monsoon rains in Thailand that killed 600 and cost the country \$45 billion, a whopping 18% of its GDP, while Slide 19 dealt with the 2010 floods in Pakistan, the most extensive natural disaster in its history that caused \$9.5 billion in damage and displaced 20 million people.

Because extreme weather events are becoming increasingly frequent and severe, estimated costs of natural disasters have risen from \$25 billion in the 1980s to over \$130 billion today, yet climate-change coverage has diminished: According to Slide 29, network channels ran only 15 climate-change stories in 2011, compared to 147 in 2007.

But all was not hand-wringing at our Climate Impacts Day. Mr. Smith spoke of his advocacy to visitors at his Children's Village of "green roofs" via a doghouse with just such a roof. These roofs are popular in New York City, he explained, where even Rockefeller Center, which has existed for decades, now sports the green toupee. Seattle, too, has retrofitted many of the city's buildings with green roofs; it's something our own City Council might consider. He spoke of "negawatts," a way of managing energy consumption more efficiently, and he expressed pride in our Farmers Market, which is being emulated across the state. Cheyenne uses raw water or recycled water for its parks, he said, an enormous savings. Likewise, the city's compost pick-up is an inspired move: Instead of cluttering up a landfill, the clippings and branches recycle at a facility into good, rich soil.

John Corra spoke fondly of Wyoming's trona industry. Trona is a water-soluble mineral formed from volcanic ash that becomes soda ash. Deposits in Southwest Wyoming, the largest in the world, yield about 90% of US demand. 50% is shipped abroad.