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Late spring after extreme winter

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As I write in late April, the daffodils are finally in bloom in Pittsford. This was one full month later than in 2012, when the US had an extremely warm winter and spring; while central Europe had a cold snowy winter. The Otter Creek is in flood after snow melt, and on my morning walk I get to admire the beauty of sky, clouds and hills reflected in the still waters of the flood plain.

The spinach and lettuce that I planted in the fall survived the long winter under a sheet of glass and a foot of snow, and the spinach is ready to eat. I have been planting peas and transplanting lettuce seedlings all week.

This winter the northern hemisphere weather pattern was frozen in place throughout January, February and March. Temperatures were colder than normal across eastern Canada and the US, but there were record high temperatures in western North America and across the whole of Eurasia. This was yet another example of a remarkably stationary weather pattern giving winter extremes across the whole northern hemisphere. Yet the global mean surface temperature for the first three months of this year reached an all-time high.

The waters of the Gulf Stream and Atlantic were also warmer than usual. The large gradient of temperature between the cold continent and the warm ocean generated many strong coastal storms. In Boston, 9 feet of winter snowfall, 5 feet in February, set a new record. As lakes and oceans get warmer, the increased evaporation is likely to give us more winter snow downstream of the Great Lakes in December, and along the East Coast in winter.

But on the West Coast, California had record winter temperatures. The spring snowpack in the mountains was at a record low, so after four years of drought, the state has introduced mandatory reductions in water use for the first time.



Figure 1. A woman navigates high snowbanks and deep puddles in the Chinatown neighborhood of Boston in early March. Boston received a record 5 feet of snow in February, 9 feet for the winter.

We are lucky that Vermont has had above average rainfall in nine of the last 10 years. This spring the Vermont Legislature is expected to pass clean water legislation to manage the stormwater runoff of nutrients from urban and agricultural land. This will reduce the pollution of Lake Champlain that leads to blooms of toxic algae.

In April, I was in Quebec City to speak to the Green Churches of Canada, an ecumenical gathering of Catholic, Protestant and Orthodox religious leaders as well as First Nation representatives. They understand that our changing climate is now a great moral challenge. The exploitation of the earth for short-term economic gain impoverishes many now. The suffering for future generations and the Earth itself could become overwhelming unless we change direction soon.

This summer, Pope Francis will issue the first papal encyclical on the environment, climate change and our care of the creation. This will map out how everything is now interconnected: the exploitation of both the poor and the Earth by our economic system and how our present choices will determine the future for our children and the Earth's ecosystems on which we depend.

In December, the next climate meeting will convene in Paris to review the commitments that the nations of the world are willing to make to reduce greenhouse gas emissions over the next decade. Let us hope they are courageous commitments, as the Earth will remember for more than a century our reluctance to change direction away from an economy based on fossil fuels.

It is tragic that so many politicians would sacrifice the Earth's climate, on which so much life depends, rather than make modest changes to our economic system by introducing a carbon pollution tax to start paying for the long-term costs of increasing greenhouse gas emissions.