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Floods, ice, fires and drought

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Water is everything to our planet. Last week, Greta Thunberg arrived in New York after crossing the Atlantic in 15 days on a racing yacht. She will be in the United States for the global strike for the climate system, Friday September 20-27, and she will speak to the United Nations on September 23. This is an existential protest by youth who are unwilling to be sacrificed for corporate greed. Indeed the unchecked exploitation of the Earth and the poor by the fossil fuel industries and society is both a crime against humanity and the Earth itself. Capitalism has given rights to corporations, but the Earth still has no rights. Legal battles are underway across the globe to establish the crime of ecocide, the destruction of the Earth's living ecosystem, but this may come too late.



The fossil fuel industry is spending some \$200 million a year on dishonest propaganda and bribes to politicians to protect its \$100 billion in annual profits. We need escalating fossil carbon taxes to reframe the economics and to help pay for both present and future costs. But the highly profitable global consumer economy, created and powered by fossil fuel, has purchased the silence of millions.

Let us start with the global weather and climate perspective. The increasing greenhouse gases have slowed the cooling of the Earth to space, and melting ice and snow has reduced the reflection of sunlight, so the Earth is warming. More than ninety percent of this heat is stored in the oceans. But the Arctic is warming twice as fast as the equator, and this has changed the mid-latitude jet stream towards large amplitude north-south waves that move slowly. In July for the first time, a convective storm in Kansas moving to the southeast, circled back over the Gulf as a tropical storm, forming the weak hurricane Barry that struck Louisiana, causing substantial flood damage. As I write, category 5 hurricane Dorian is inflicting catastrophic damage to Grand Bahama, as it sits almost stationary just east of Florida.

For the year ending with June 2019, the central United States was cool with record precipitation in Nebraska, Kansas, Oklahoma and Arkansas. It was the second wettest on record for Iowa and Texas. The flooding on the Mississippi River this spring was the longest on record. The eastern and south-eastern US was warm, but 14 eastern states also had record precipitation for the year. The realization is spreading that billions are needed after floods to rebuild levees, and build new floodwalls to hold back rising waters in towns. All this should be funded by a tax on fossil fuel.

But elsewhere in the northern hemisphere, there were record high temperatures in Europe as well as Alaska, and fires across the warming Arctic, especially in Siberia. These fires spread soot that darkens the Arctic ice and speeds melting. The very warm air from Europe also blew north over Greenland, and set new records for Greenland ice-cap melt in early August. As the Arctic ice melts climate changes, and as Greenland melts sea-level rises.

With Brazil once again encouraging development, more than forty thousand fires were set burning across the Amazon to clear land during the tropical dry season. In India, while south-western states have severe monsoon flooding, millions in the east are running out of fresh water. The city of Chennai with 10 million people has a water crisis, with desiccated reservoirs and shrinking ground water supplies. Water is critical for agriculture and crops everywhere, but three-quarters of the earth's soils are now degraded as well. An era of environmental collapse is coming, as complex natural systems become destabilized. The rich countries that have the largest carbon footprint carry the largest responsibility.

We need this reminder, even though none of this is good news. Here at home remember local agriculture is critical. Harvest and share your crops and thank your local farmers. Plant a rye-grass cover crop to improve the soil in your vegetable garden. What can you plant to winter over under glass? In early April, we delight in eating spinach and lettuce that was planted in October. Teach your children and grandchildren to grow food, and support and educate them when they protest against the corruption in our society. Roots in the Earth can support us through the difficult times ahead.