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Atmospheric carbon dioxide highest in 3 million years: Column

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On June 7 the Scripps Institution of Oceanography and the National Oceanic and Atmospheric Administration (NOAA) announced that the atmospheric CO₂ (carbon dioxide) concentration had reached its highest level since accurate measurements began 63 years ago. The monthly average CO₂ concentration for 2021 is 419 ppm.

When I was born in 1955 the CO₂ concentration in the atmosphere was 313 ppm. What? In 66 years, the CO₂ concentration has increased by over 100 ppm! Some people don't believe there is a climate crisis or that humans are to blame. Some think there is nothing we can do about CO₂ levels. You can't see carbon dioxide, so maybe that's why some think it's not a problem.

There are many things we can't see but believe exist, perhaps because we trust science. Temperature or heat for example. We can't see temperature or heat, but we can measure it with a thermometer.

I'm a farmer who wants to know how much phosphorus is in my soil so I don't waste money buying phosphorus fertilizer if I don't need it. I can't see soil phosphorus, but I can send a soil sample to a lab, and they can measure how much phosphorus is in the soil and recommend what I need based on the crop I want to grow.

I want to know whether my water is safe to drink. I can't see bacteria in my water, but I can take a water sample to a lab, and they use science to inform me if bacteria are in the water.

We can't see CO₂ in the air, but scientists at Scripps use an infrared analyzer to measure it. Their method was first developed by David Keeling in 1958. He was awarded the Medal of Science from George W. Bush for his groundbreaking work on measuring atmospheric CO₂.

Joint measurements from Scripps and NOAA are known as the Keeling Curve. In 1958 the CO₂ concentration was 315 ppm. It's now higher than it's been in 3 million years, according to scientists at NOAA. This causes sea levels to rise and makes our weather warmer and weirder. It's

needs to be below 350 ppm.

The largest contributor (48 percent) to greenhouse gas emissions and CO₂ is the burning of fossil fuels for energy. The second-largest contributor (29 percent) is fossil fuel-driven transportation. We've been on a fossil fuel binge for too long. It's time to move on to 100 percent clean energy generation and electric cars. No more coal-fired power plants or fracked gas. No more fossil fuel pipelines — they are a waste of money. We need solar panels on every building, on every brownfield and on marginal farmland. We need utility-scale solar and wind turbines.

We also need to take CO₂ out of the atmosphere and lock it up. The process is called carbon sequestration — taking carbon out of the air and storing it in a safe place where it can be put to good use. Trees do this. They take CO₂ out of the atmosphere and store it as wood. Other plants do it as well. Corn, for example, takes CO₂ out of the air and stores most of it in its stalks. When farmers leave the stalks on the land, they decompose, and their carbon goes into the soil. Carbon is good for the soil. As a matter of fact, the soil is the second-largest carbon sink on the planet. Oceans are the largest and forests are third.

Want to help us get to 350 ppm CO₂? Here's what you can do:

Go solar: Put photovoltaic panels on your house or in your yard. Trade-in your gas-guzzling car for an electric one. Encourage your locality to develop a good ordinance for utility-scale solar and then support these projects. Support soil health initiatives. Support your local farmers.

— *Bobby is a farmer in Churchville, Va. He teaches natural resources management at James Madison University and is the author of several books. He can be reached through his website at www.gettingmoreontheground.com.*