
Coal, natural gas, petroleum. Thoughtlessly we call these substances “fuels”—fuels to burn for creating pleasant climates inside homes and offices; fuels to power appliances and engines. For years, like nearly everyone, I never thought beyond our mere use of these things. I neglected to consider their role in the Earth’s wider economy. This all changed when my family moved to a Wisconsin peatland in 1972. Since then, conducting research there with my graduate students has produced four decades of discovery.

For thousands of years, wetland plants and algae in a bay of glacial Lake Waubesa took carbon dioxide from the atmosphere. They transformed it by photosynthesis into the carbon structure of life, eventually adding their remains, page upon page, to the accumulating peat. Eventually, this peat filled the bay for an area more than a mile long, reaching a depth of 95 feet at the present lake edge. When first I walked here, I saw the vibrant surface of plants and wetland creatures; now, in my mind’s eye, I also see the deep-layered remains of creatures below.

Also standing and walking here (much more gracefully than I) are sandhill cranes. These stately creatures, as conservationist Aldo Leopold observed, “stand, as it were, upon the sodden pages of their own history.” Elsewhere, the sodden pages of peat deposits have been cut over the ages to be dried for fuel. The early Romans saw this practiced by conquered peoples of northern and western Europe. Peat was also used as fuel in Ireland, Scotland, and northern Europe after forests were cleared for agriculture. And peat is the precursor of coal, transforming under geologic pressure into brown coal, bitumen, bituminous coal, and anthracite.

These plant remains are part of the great system whereby carbon is removed from the atmosphere, helping to maintain a habitable Earth. This carbon-sequestering process incorporates not only peat and coal but also natural gas and petroleum—all of them products of life whose carbon all came, directly or up through the food chain, from photosynthesis.

Carbon sequestration is not a human invention, nor is it recent. Instead, it is part of a dynamic equilibrium that maintains the concentration of carbon dioxide in the atmosphere in ways that sustain the Earth as a habitable abode. Currently, we are mistaking Earth’s great carbon sequestration system for fuel, and burning its contents on an enormous scale. Our folly is burning up the substance of the very system that is vital to sustain life on Earth.

The lessons of the great carbon-bearing volumes of Earth must be read, understood, and applied—promptly and sincerely. Neglect and denial of these volumes and their meaning must not be tolerated any longer. It is vitally, urgently necessary to place the human economy within the operations of the biospheric economy—including Earth’s carbon economy.

A first step toward our needed response is to replace the term “fossil fuel” with “fossil carbon.” This recognizes that carbon is much more than fuel: It’s the backbone of all life, a major atmospheric regulator of Earth’s climate, and a moderator of the acidity of the world’s oceans. Burning Earth’s great system of carbon sequestration is disastrous for the biospheric economy—and therefore for our own.

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