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Comment

Defining the Anthropocene

I resigned from the Anthropocene Working Group because our global impact began long before the arbitrary date chosen, says **Erle Ellis**

FROM rapid climate change to biodiversity loss, the Anthropocene marks our times as an age of human-caused planetary disruption. A working group of the International Commission on Stratigraphy now proposes to more precisely define the Anthropocene, a term originated by Paul Crutzen and Eugene Stoermer in 2000.

Using the methods that demark all units in Earth's official history book, the geologic time scale, the group would define the Anthropocene as an epoch of geological time starting precisely in 1950, marked by plutonium isotopes from nuclear weapons fallout in the sediments of Crawford Lake in Canada.

People familiar with the term might find this a strange choice of timing. Automobiles and even the atomic bomb are thus relegated to a prior epoch, the Holocene, which began at the end of the last glacial period, 11,700 years ago (marked by a rapid shift in deuterium in a Greenland ice core). Defining planetary change in relation to a single lake is also hard to parse.

Whatever one's perspective, defining an Anthropocene Epoch could seem an arcane matter best left to the experts. But nothing could be further from the truth.

I joined the Anthropocene Working Group in 2009, inspired by an article entitled "Are we now living in the Anthropocene?" Many good years of scientific collaboration followed. Even as an ecologist with differing



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perspectives from the geologist majority, I generally found my contributions welcome.

In 2016, all this began to change with a vote deciding that only evidence supporting a mid-20th century start date would be considered in defining the Anthropocene. I probably should have resigned then. I cast a dissenting vote. Broader discussions continued. But the path was set. Now, the group brooks no dissent in promoting a 1950 Anthropocene. I resigned in protest in July, after two others.

Dividing Earth's human transformation into two parts, pre

and post-1950, does real damage by denying the deeper history and the ultimate causes of Earth's unfolding social-environmental crisis. Were the changes wrought by industrial and colonial nations before 1950 not significant enough to transform the planet? The political ramifications of such a misleading and scientifically inaccurate portrayal are clearly profound and regressive.

Human transformation of Earth's ecosystems, biodiversity and climate began long ago, and expanded dramatically through five centuries of European colonialism. Industrial

greenhouse gas emissions in the "latter part of the 18th century" were Crutzen's Anthropocene inspiration and he noted that a more precise start would be "arbitrary". I couldn't agree more.

Evidence for unprecedented anthropogenic planetary change is overwhelming. It readily speaks for itself. If a geological definition is needed, the Anthropocene is easily defined as a complex, transformative and ongoing geological event analogous to the Great Oxidation Event and others in the geological record.

Choosing to systematically ignore the overwhelming evidence of Earth's long-term anthropogenic transformation isn't just bad for science, it is bad for public understanding of the causes of these changes and for action to address them. This, when broader cooperation to tackle these grave societal challenges is more critical than ever.

There is no need for a precise start date for the Anthropocene. There is no benefit, scientific or otherwise, to defining the human age in a shallow band of sediment in a single lake. And, most importantly, there is no need for a divisive narrative, with the mantle of scientific authority claiming that the age of human-caused planetary change began in 1950. ■



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