

The meaning of the Anthropocene: Why it matters even without a formal geological definition

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For the last seven decades, Earth has been operating in unprecedented ways, leading many researchers to argue that we have entered a new

geological epoch known as the Anthropocene.

"While it may not have been formally accepted onto the [geological time scale](#), the Anthropocene is real and its effects have drastically and irrevocably changed the [living conditions](#) on our planet," said Julia Adeney Thomas, a professor of history at the University of Notre Dame. "It should therefore be treated as a de facto new epoch of Earth's history."

That argument is at the crux of [an article published](#) in the journal *Nature* and authored by Thomas, Jan Zalasiewicz and Colin Waters of Leicester University, Simon Turner of University College London and Martin Head of Brock University.

The article was also co-signed by more than 50 other researchers representing many different disciplines and institutes from around the world. It summarizes the evidence of massive physical, chemical and biological change on the planet, including the rapidly warming climate.

"For many thousands of years, large human populations coexisted with relatively stable planetary conditions and left abundant traces of their existence and their environmental impacts," Thomas said.

"But the planet is now sharply different, and the significance of these changes extends far beyond the Earth sciences to affect the social sciences, the humanities and arts—and to form a now-permanent context for the work of planners and decision-makers."

The authors emphasize that it makes sense to precisely delimit the beginning of the Anthropocene at 1952. That year not only marks the prominent upturn of artificial radionuclide fallout around the Earth from hydrogen bomb tests, they note, but closely coincides with many other changes, such as the appearance of plastics and many other novel

compounds and the rapid growth of greenhouse gases, as well as widespread social, economic and political changes as the postwar world entered a period of unprecedented growth.

"Wide acceptance of such a definition would make for more precise analysis of the many phenomena associated with the Anthropocene, and allow us to communicate clearly," Thomas said.

"The Anthropocene may have been rejected by the International Commission on Stratigraphy—for now. But it is all too alive in the real world, and we should recognize that."

More information: Jan Zalasiewicz et al, The meaning of the Anthropocene: why it matters even without a formal geological definition, *Nature* (2024). [DOI: 10.1038/d41586-024-02712-y](https://doi.org/10.1038/d41586-024-02712-y)

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