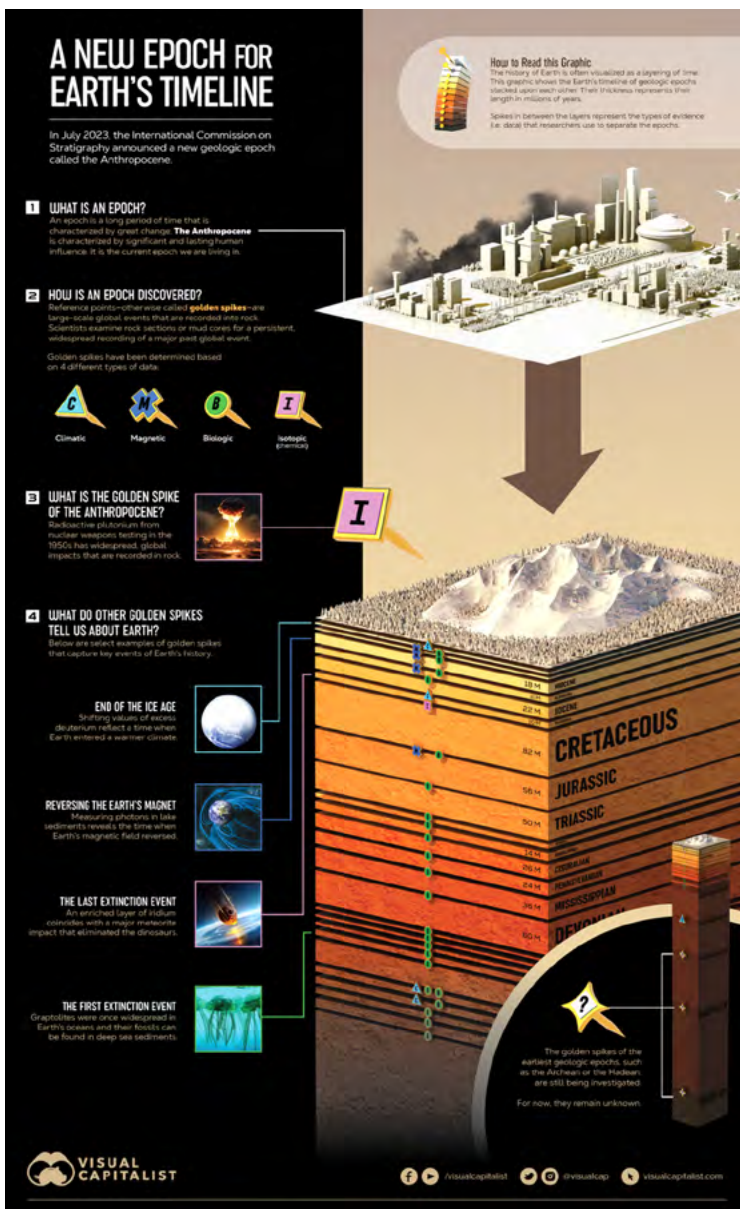


## The Anthropocene: A New Epoch in the Earth's History

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Over the course of Earth's history, there have been dramatic shifts in the landscape, climate, and biodiversity of the planet. And it is all archived underground.

Layers of the planet's crust carry evidence of pivotal moments that changed the face of the Earth, such as the ice age and asteroid hits. And scientists have recently defined the next major epoch using this geological time scale—the Anthropocene.

In this infographic we dig deep into the Earth's geological timeline to reveal the planet's shift from one epoch to another, and the specific events that separate them.

### Understanding the Geological Timeline

The Earth's geological history is divided into many distinct units, from eons to ages. The time span of each varies, since they're dependent on major events like new species introduction, as well as how they fit into their parent units.

If we were to cut a mountain in half, we could notice layers representing these changing spans of time, marked by differences in chemical composition and accumulated sediment.

Some boundaries are so distinct and so widespread in the geologic record that they are known as "golden spikes." Golden spikes can be climatic, magnetic, biological, or isotopic (chemical).

Geochronologic unit	Time span	Example
Eon	Several hundred million years to two billion years	Phanerozoic
Era	Tens to hundreds of millions of years	Cenozoic
Period	Millions of years to tens of millions of years	Quaternary
Epoch	Hundreds of thousands of years to tens of millions of years	Holocene
Age	Thousands of years to millions of years	Meghalayan

Note: Sub epochs (between epochs and ages) have also been ratified for use in 2022 but are not yet clearly defined.

# THE ANTHROPOCENE

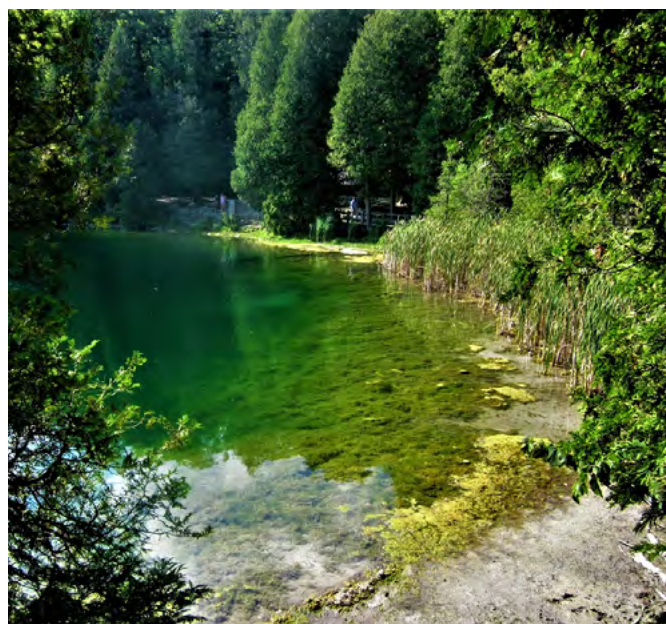
## Earth's Geological Timeline Leading Up to the Anthropocene

The Earth has gone through many epochs leading up to the modern Anthropocene.

These include epochs like the Early Devonian, which saw the dawn of the first early shell organisms 400 million years ago, and the three Jurassic epochs, which saw dinosaurs become the dominant terrestrial vertebrates.

Over the last 11,700 years, we have been living in the Holocene epoch, a relatively stable period that enabled human civilization to flourish. But after millennia of human activity, this epoch is quickly making way for the Anthropocene.

The Anthropocene is distinguished by a myriad of imprints on the Earth including the proliferation of plastic particles and a noticeable increase in carbon dioxide levels in sediments.



*Crawford Lake Conservation Area- Crawford Lake- Campbellville in Milton- Ontario. Source: Wikimedia Commons*

## A New Chapter in Earth's History

The clearest identified marker of this geological time shift, and the chosen golden spike for the Anthropocene, is radioactive plutonium from nuclear testing in the 1950s.

The best example has been found in the sediment of Crawford Lake in Ontario, Canada. The lake has **two distinct layers of water** that never intermix, causing falling sediments to settle in distinct layers at its bed over time.

While the International Commission on Stratigraphy announced the naming of the new epoch in July 2023, Crawford Lake is still in the process of getting approved as the site that marks the new epoch. If selected, our planet will officially enter the Crawfordian Age of the Anthropocene.



*Crawford Notch and Lake. Source: Wikimedia Commons*

Epoch	Its start (MYA = Million Years Ago)
Holocene	0.01 MYA
Cretaceous	145.0 MYA
Pleistocene	2.58 MYA
Jurassic	201.40 MYA
Miocene	23.04 MYA
Triassic	251.90 MYA
Lopingian	259.50 MYA
Guadalupian	273.00 MYA
Cisuralian	300.00 MYA
Pennsylvanian	323.40 MYA
Oligocene	33.90 MYA
Mississippian	359.30 MYA
Devonian	419.00 MYA
Silurian	422.70 MYA
Ludlow	426.70 MYA
Wenlock	432.90 MYA
Llandovery	443.10 MYA
Ordovician	486.90 MYA
Furongian	497.00 MYA
Pliocene	5.33 MYA