

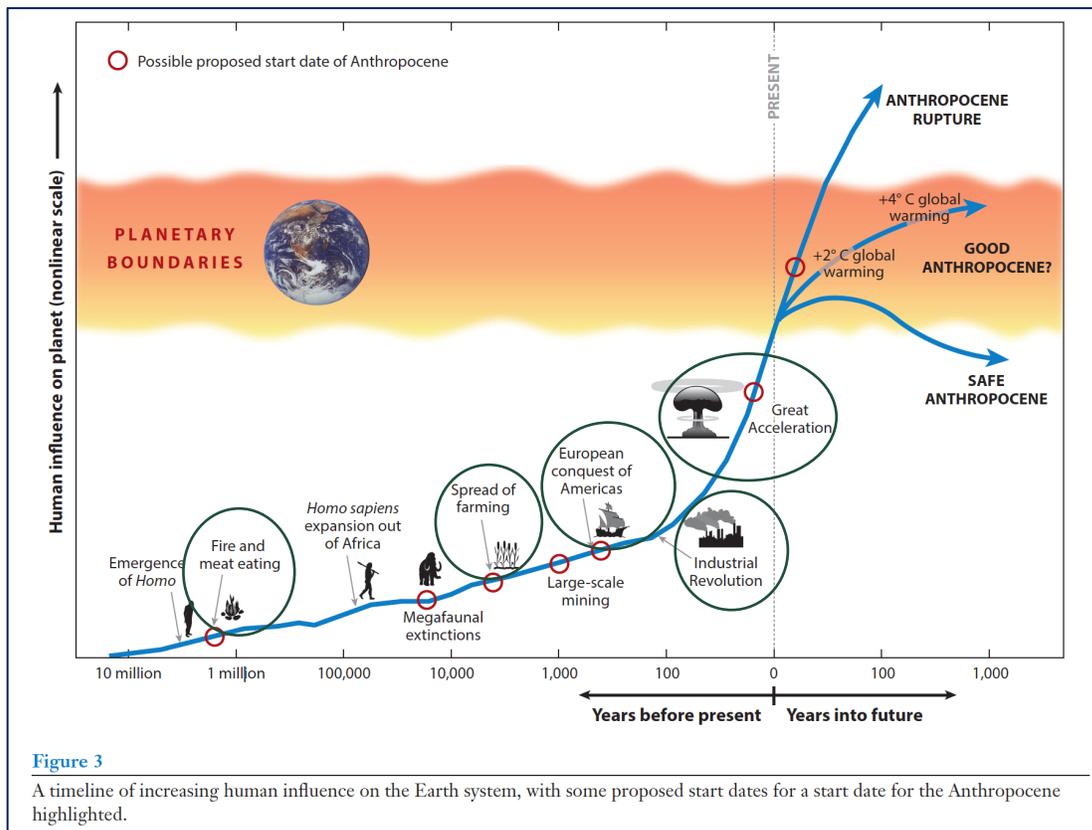
The "Golden Spike"

Evidence Sheets:

Colonization (Circa 1610)

Depending on the criteria used, the beginning of the Anthropocene can be dated to different time periods:

- Human control over fire (1.8 million years ago)
- Beginnings of agriculture (7-8 thousand years ago)
- Colonization (Circa 1610)
- Industrialization (Circa 1800)
- The Great Acceleration (Mid-20th Century)



Source: Malhi, 2017, p. 90.

○ = Possible "Golden spike"



Group Task:

You have been assigned to a group to examine one of the time periods above. Your group's task is to build a convincing argument about why that date should be recognized as the beginning of the Anthropocene.

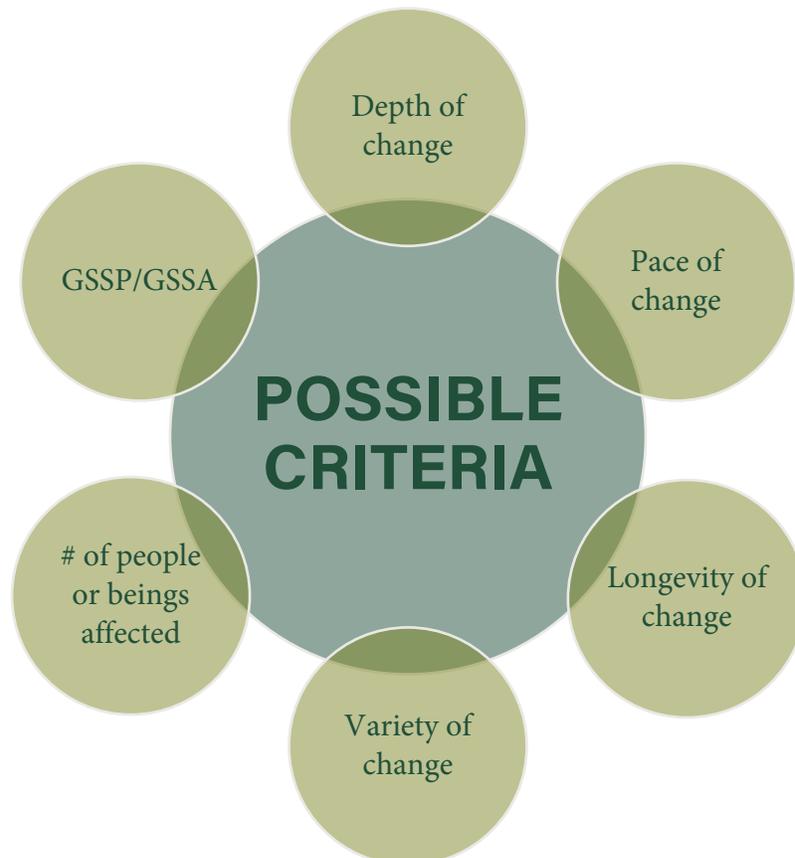
View an interactive timeline for more information by visiting the following link:

<https://tinyurl.com/54387b9f>

Examine the provided materials for your assigned time period (see the text, quotations, images and graphs below). You may also bring in your own information or sources (time permitting).

Develop your argument and record your ideas on the Activity Sheet. Select the most relevant criteria for your time period, from the choices offered below. You may also want to anticipate the arguments of other groups and offer counter-arguments.

Be prepared to present your argument to the class in a brief 2-minute summary!



Colonization (Circa 1610)

Another proposed date for the beginning of the Anthropocene is European colonization. The economic and cultural connections formed between Europe, Asia, Africa, and the Americas during the 16th and 17th centuries marked the beginning of a globalized economy. This was also the beginning of the “Columbian Exchange”: an unprecedented exchange of domesticated plants, animals, and pathogens between regions around the world. For instance, crops that originated in the Americas like maize/corn and potatoes were grown in Europe, Asia, and Africa. Meanwhile, crops such as sugarcane and wheat were transported to the Americas for widespread monoculture farming. There is clear stratigraphic (geological or rock-embedded) evidence that marks a key transition in the biosphere (region of the Earth occupied by living organisms) as a result of colonization.

The date of 1610 has been suggested as a “Golden Spike” for colonization, due to the dip in atmospheric carbon dioxide that occurred in that year. This change can be attributed to the genocide of Indigenous populations following contact with European colonizers. Indigenous societies declined rapidly due to disease, conflict, and slavery. It has been argued that this demographic shift led to a reduction of fire use and the concurrent expansion of forests over abandoned agricultural lands, resulting in a decrease of atmospheric carbon dioxide. This evidence appears in Antarctic ice core records which could serve as a possible GSSP. Scientists who defend 1610 as the Golden Spike for the Anthropocene call it the “Orbis spike”, the Latin word for “world,” indicating its global reach.

“In terms of stratigraphy, the appearance of New World plant species in Old World sediments – and vice versa – may provide a common marker of the Anthropocene across many deposits because pollen is often well preserved in marine and lake sediments...Specifically, the transcontinental range extension of at least one Old World species into the New World...and a second species from the New World expanding into the Old World...together constitute a unique signature in the stratigraphic record. This transcontinental range expansion – stratigraphically marking before and after an event – is comparable to the use of the appearance of a new species as boundary markers in other epoch transitions” (Lewis & Maslin, 2015, p. 175).



“...the arrival of Europeans in the Americas also led to a large decline in human numbers. Regional population estimates sum to a total of 54 million people in the Americas in 1492, with recent population modelling estimates of 61 million people. Numbers rapidly declined to a minimum of about 6 million people by 1650 via exposure to diseases carried by Europeans, plus war, enslavement and famine” (Lewis & Maslin, 2015, p. 175).

“The main advantage to the 1610 Orbis spike is the geological and historical importance of the event. In common with other epoch boundaries this boundary would document changes in climate, chemistry and paleontological signals...In the view of many historians, industrialization and extensive fossil fuel use were only made possible by the annexing of the Americas...Thus, dating the Anthropocene to start about 150 years before the beginning of the Industrial Revolution is consistent with a contemporary understanding of the likely material causes of the Industrial Revolution. The main disadvantage to the Orbis hypothesis is that a number of deposits may not show large changes around 1600, particularly in terms of biological material from the transport of species to new continents or oceans, because there are time-lags before species appear in geological deposits” (Lewis & Maslin, 2015, p. 177).

“...by dating the Anthropocene to colonialism we can at least begin to address the root of the problem, which is the severing of relations through the brutality of colonialism coupled with an imperial, universal logic. Through this, we might then begin to address not only the immediate problems associated with massive reliance upon fossil fuel and the nuclear industry, but the deeper questions of the need to acknowledge our embedded and embodied relations with our other-than-human kin and the land itself. This necessarily means re-evaluating not just our energy use, but our modes of governance, ongoing racial injustice, and our understandings of ourselves as humans” (Davis & Todd, 2017, p. 776).

