

¿La era del antropoceno?



Laura Gallardo Klenner
PhD Meteorología Química

Profesora Asociada, Departamento de Geofísica, Universidad de Chile

(CR)² | Directora
Center for Climate
and Resilience Research

CONICYT/FONDAP/15110009



Center for Climate and Resilience Research - CR2

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Contenidos

- Revolución industrial y sus consecuencias
- Historia del concepto
- Límites planetarios
- Discusión geológica
- “A scoop”



Aproximadamente 433.000 resultados (0,55 segundos)

Anthropocene - Wikipedia, the free encyclopedia

<https://en.wikipedia.org/w/index.php?title=Anthropocene&oldid=6900000> ▾ Traducir esta página

The Anthropocene is a proposed epoch that begins when human activities started to have a significant global impact on Earth's geology and ecosystems.

Etymology - Nature of human effects - Anthropocene temporal limit

Welcome to the Anthropocene | Welcome

www.anthropocene.info/ ▾ Traducir esta página

The Anthropocene defines Earth's most recent geological time period as being human-influenced, or anthropogenic, based on overwhelming global evidence that ...

Anthropocene Working Group - Subcommission on Quaternary ...

quaternary.stratigraphy.org/workinggroups/anthropocene/ ▾ Traducir esta página

The 'Anthropocene' is not a formally defined geological unit within the Geological ... Broadly, to be accepted as a formal term the 'Anthropocene' needs to be (a) ...

What is the Anthropocene and Are We in It? | Science | Smithsonian

www.smithsonianmag.com/.../what-is-the-anthropocene-and-are-we-in-it-1.17085 ▾ Traducir esta página

Anthropocene has become an environmental buzzword ever since the atmospheric chemist and Nobel laureate Paul Crutzen popularized it in 2000. This year ...

Anthropocene - Journal - Elsevier

www.journals.elsevier.com/anthropocene/ ▾ Traducir esta página

Anthropocene is an interdisciplinary journal that publishes peer-reviewed works addressing the nature, scale, and extent of interactions that people have with ...

Anthropocene: The human age : Nature News & Comment

www.nature.com/news/anthropocene-the-human-age-1.17085 ▾ Traducir esta página

11 mar. 2015 - This provocative exhibit will focus on the Anthropocene — the slice of Earth's history during which people have become a major geological ...

Human impact has pushed Earth into the Anthropocene, scientists say ...

www.theguardian.com/environment/pollution

7 ene. 2016 - The question of whether humans' combined environmental impact has tipped the planet into an 'Anthropocene' – ending the current Holocene ...

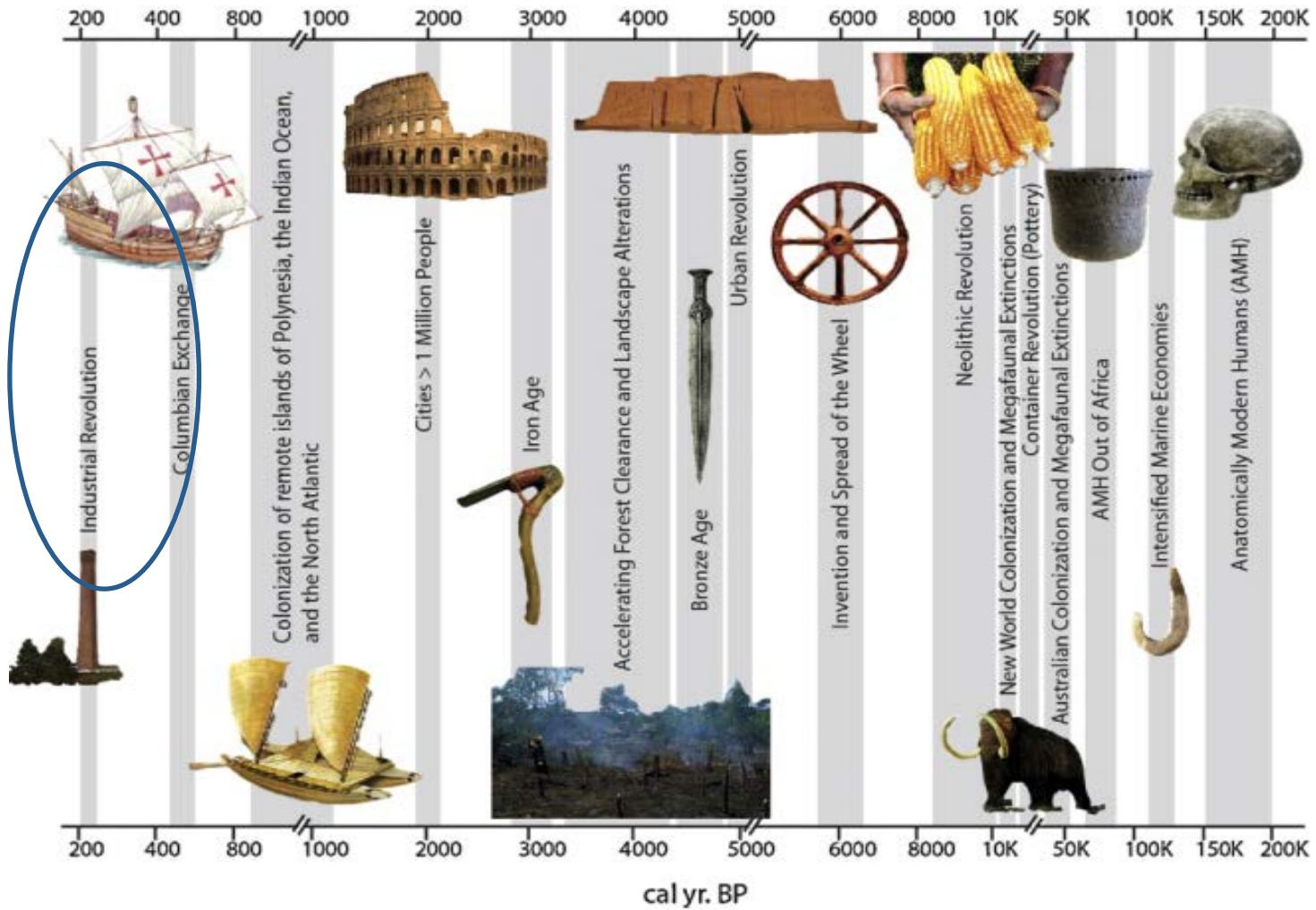
The Anthropocene is functionally and stratigraphically distinct from the ...

El sistema climático es un sistema acoplado y complejo (O no tan simple como T y P)



Nuestra habilidad de cambiar el mundo

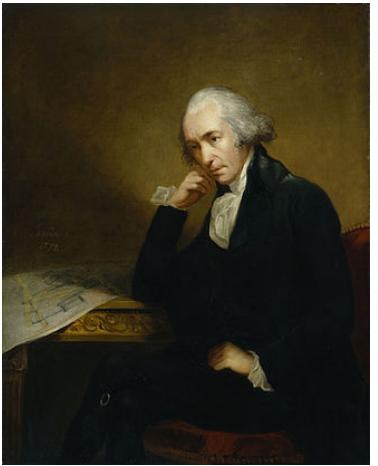
cal yr. BP



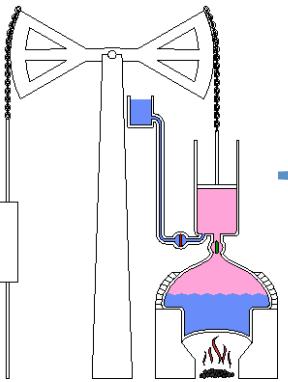
Braje, T. J. and Erlandson, J. M. 2013. Anthropocene 4, 116-121.

Algunas consecuencias de la RI

Más energía para más trabajo y más producción



James Watt (1736–1819)



-
- **Urbanización y reorganización social**
- **Agricultura intensiva**
- **Uso masivo de combustibles fósiles y fertilizantes sintéticos (😢)**
- ...



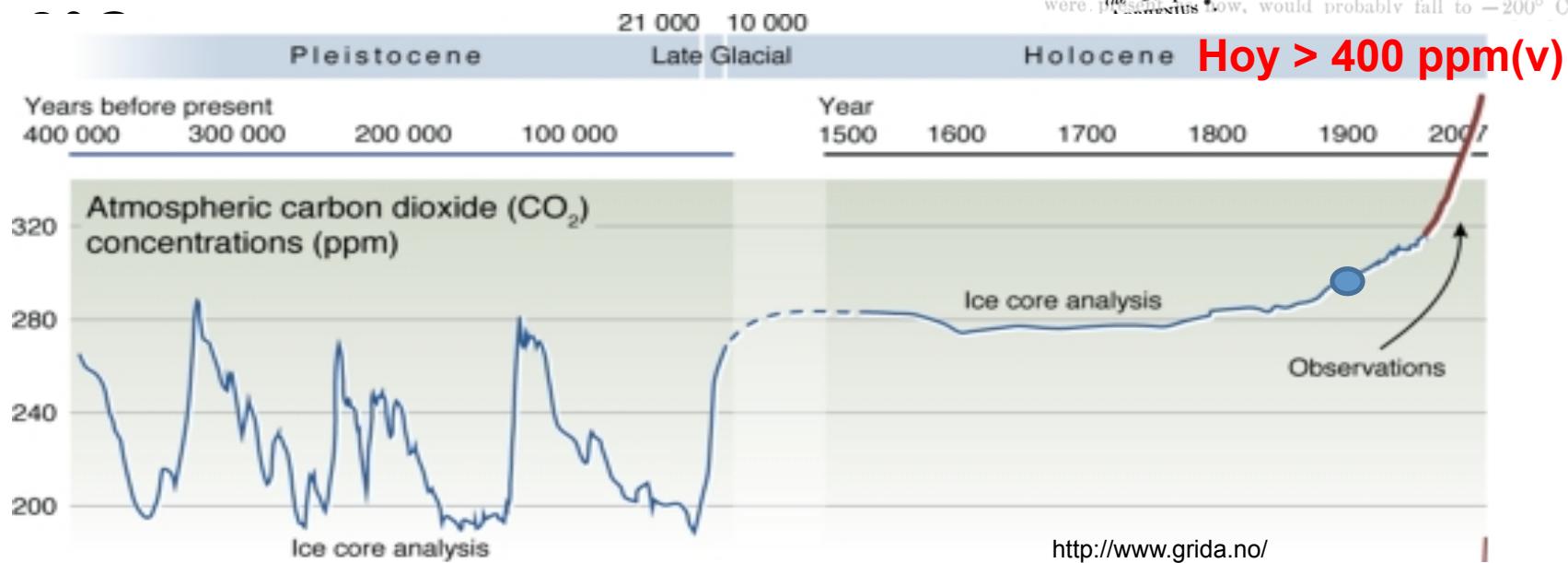
Antes de la COP o el IPCC...

Svante Arrhenius, 1895/6

A más CO₂, más efecto invernadero y mayor T media; Pre-Ind*2 => 5 o



Tyndall † in particular has pointed out the anomalous importance of the atmosphere in this circumstance. Another side of the question, that has hitherto attracted the attention of scientists, is this: Is the temperature of the ground in any way influenced by presence of heat-absorbing gas in the atmosphere? Fourier maintained that the atmosphere acts like the glass of a hot house, because it lets through the light rays of the sun and retains the dark rays from the ground. This idea was elaborated by Pouillet §; and Landolt ||. Prof. SVANTE ARRHENIUS researches led to the influence of Carbonic Acid in the Air upon the Temperature of the Ground. By Prof. SVANTE ARRHENIUS. On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground. By Prof. SVANTE ARRHENIUS. Now, would probably fall to -200° C., if there were no atmosphere.



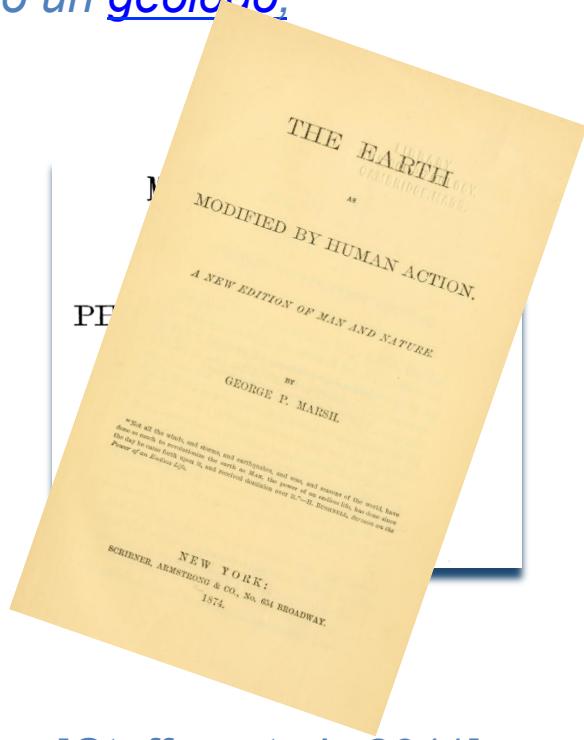
Un concepto nuevo pero no tanto



anthropozoic era

*Antonio Stoppani (1824-1891) è stato un geologo,
paleontologo e patriota italiano.*

George Perkins Marsh (1801 – 882), an American diplomat and philologist, is considered by some to be America's first environmentalist and the precursor to the sustainability concept,^[1] although "conservationist" would be more accurate.



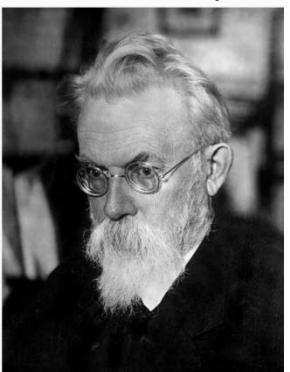
[Steffen et al., 2011]

...y en el siglo XX...

Eduard Suess



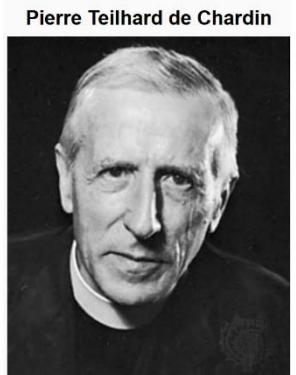
Vladimir Vernadsky



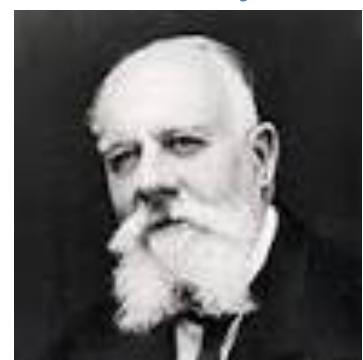
Biogeoquímica

Biosphere/Noösphere
(Anthropogenic Transformation)
~1920's

E. LeRoy



Geología



Matemática/Filosofía

[Steffen et al., 2011]

Una foto que cambió nuestra manera de ver el mundo: Es finito



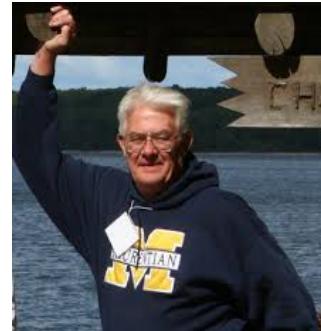
This view of the rising Earth greeted the Apollo 8 astronauts as they came from behind the Moon after the fourth nearside orbit. ..

http://www.nasa.gov/vision/earth/features/bm_gallery_4.html

La re-introducción del concepto



Paul J. Crutzen and Eugene F. Stoermer,
“The Anthropocene,” *IGBP Newsletter* 41
(May 2000): 17–18.



major and still growing impacts of human activities on earth and atmosphere, and at all, including global, scales, it seems to us more than appropriate to emphasize the central role of mankind in geology and ecology by proposing to use the term "anthropocene" for the current geological epoch. The impacts of current human activities will continue

The author has written "Planetary Weather" for the post geological epoch of the earth. It was first to have been prepared for the first time by Dr. Charles Lyell in 1851, and adopted by him in his "Principles of Geology," published in Bologna in 1852. During the same year he published a paper in the "Philosophical Magazine" giving a scientific geological, meteorological and astronomical forecast for a century of the nineteenth. A book entitled "The Weather of the World" was published by a member of the Smithsonian. A book entitled "The Weather of the World" was published by a member of the Smithsonian. A book entitled "The Weather of the World" was published by a member of the Smithsonian. A book entitled "The Weather of the World" was published by a member of the Smithsonian.

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engine in 1984. About at that time, biotic assemblages in most lakes began to show large changes (11-13).

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Paul J. Crutzen
Max-Planck-Institut für Chemie
Division of Atmospheric Chemistry
P.O. Box 12 00
D-5530 Mainz
GERMANY
Email: pjm@mpch-mainz.mpg.de

Eugene F. Stoermer
Center for Great Lakes Studies
University of Michigan
Ann Arbor, Michigan 48109-1364
USA

To assign a more specific date to the onset of the “anthropocene” seems somewhat arbitrary, but we propose the latter part of the 18th century, although we are aware that alternative proposals can be made (some may even want to include the entire holocene). However, we choose this date because, during the past two centuries, the global effects of human activities have become clearly noticeable. This is the period when data

(CR)²

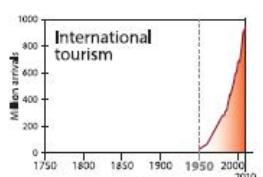
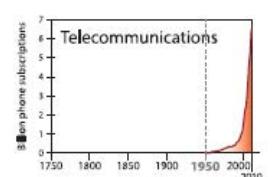
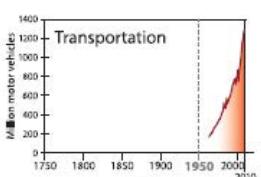
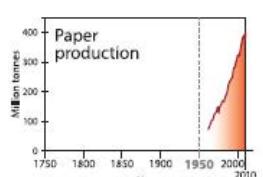
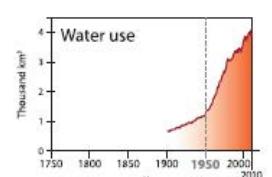
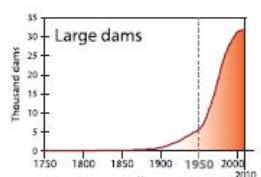
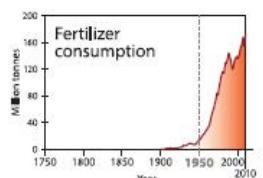
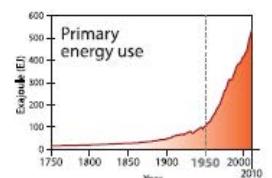
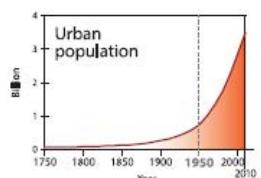
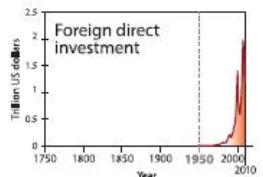
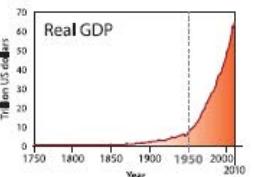
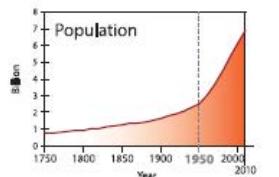
(CR)² Center for Climate and Resilience Research
Earth system science for Chile: a sound basis for building resilience in a changing climate

Antropoceno y la gran aceleración

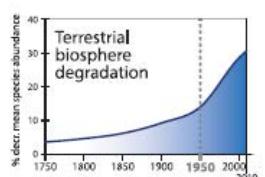
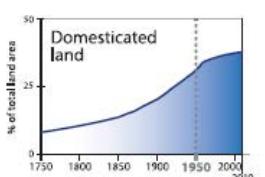
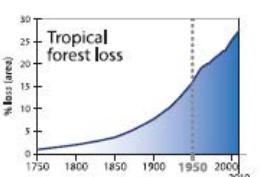
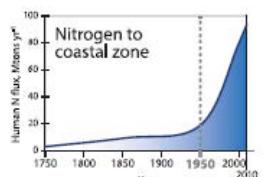
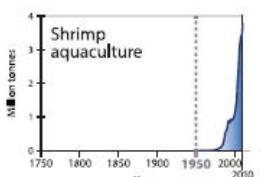
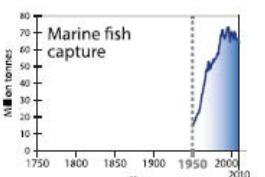
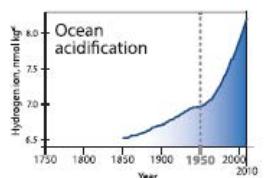
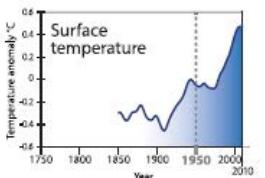
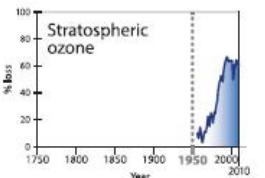
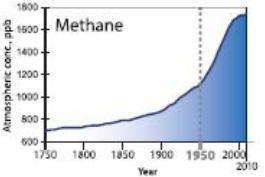
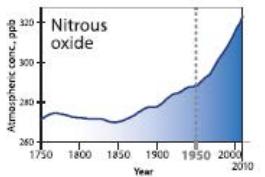
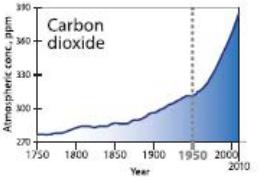
Nuestra habilidad de modificar el entorno, desde la revolución industrial, se ha transformado en un forzante comparable a los naturales (antropoceno) dando lugar a cambios que ocurren en una tasa sin precedentes en la historia humana.



Socio-economic trends

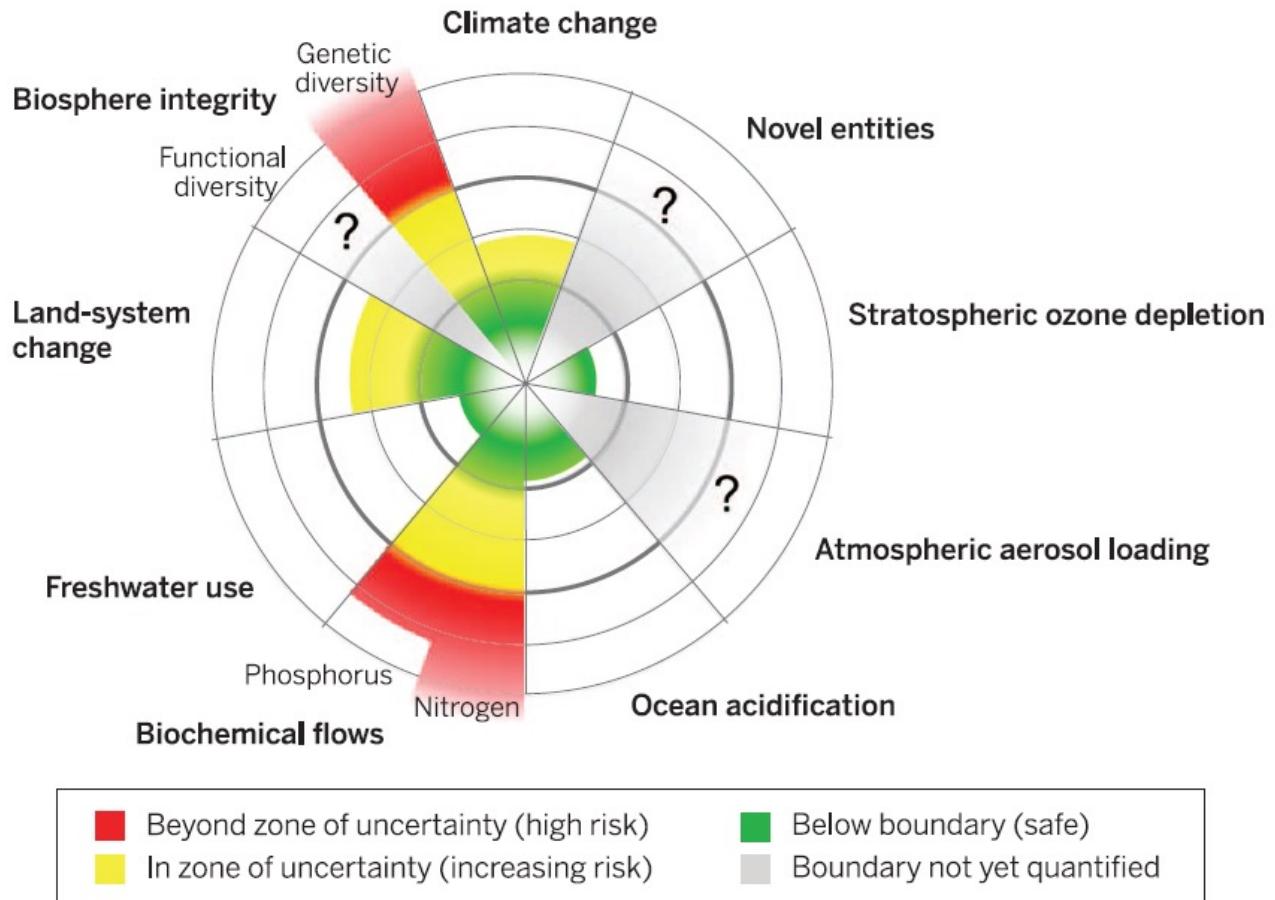


Earth system trends



Steffen, W., et al. (2015). "The trajectory of the Anthropocene: the great acceleration." *The Anthropocene Review* 2(1): 81-98.

Bordes/Límites planetarios



J. Rockström et al., *A safe operating space for humanity*. *Nature* 461, 472–475 (2009). doi: 10.1038/461472a; pmid: 19779433
W. Steffen et al., *Planetary boundaries: Guiding human development on a changing planet* *Science* 13 Feb 2015:Vol. 347, Issue 6223, DOI: 10.1126/science.1259855

No a tod@s les gusta el concepto



The geology of mankind? A critique of the Anthropocene narrative

Andreas Malm and Alf Hornborg

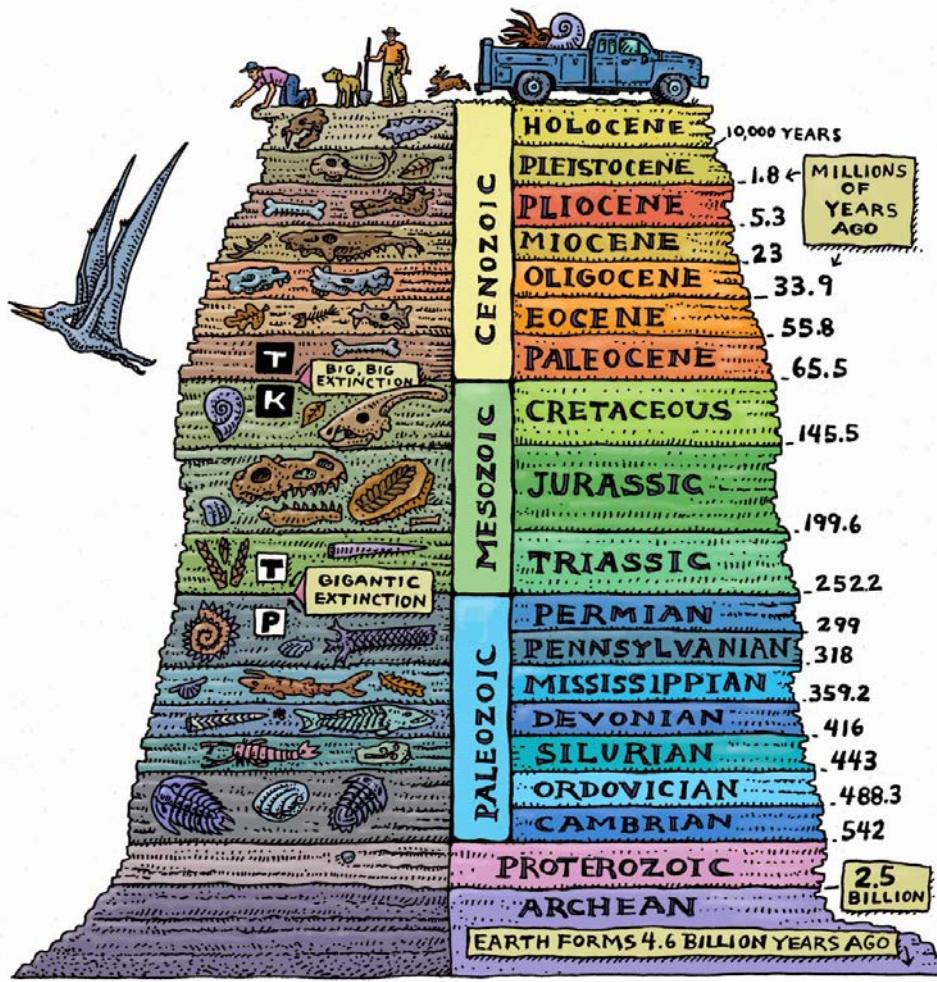
Abstract

The Anthropocene narrative portrays humanity as a species ascending to power over the rest of the Earth System. In the crucial field of climate change, this entails the attribution of fossil fuel combustion to properties acquired during human evolution, notably the ability to manipulate fire. But the fossil economy was not created nor is it upheld by humankind in general. This intervention questions the use of the species category in the Anthropocene narrative and argues that it is analytically flawed, as well as inimical to action. Intra-species inequalities are part and parcel of the current ecological crisis and cannot be ignored in attempts to understand it.

The Anthropocene Review
2014, Vol. 1(1) 62–69
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DOI: [10.1177/2053019613516291](https://doi.org/10.1177/2053019613516291)
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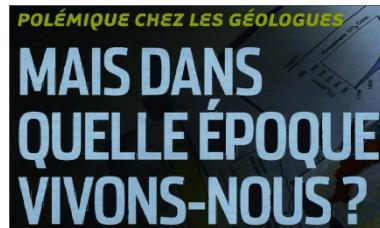
Épocas geológicas



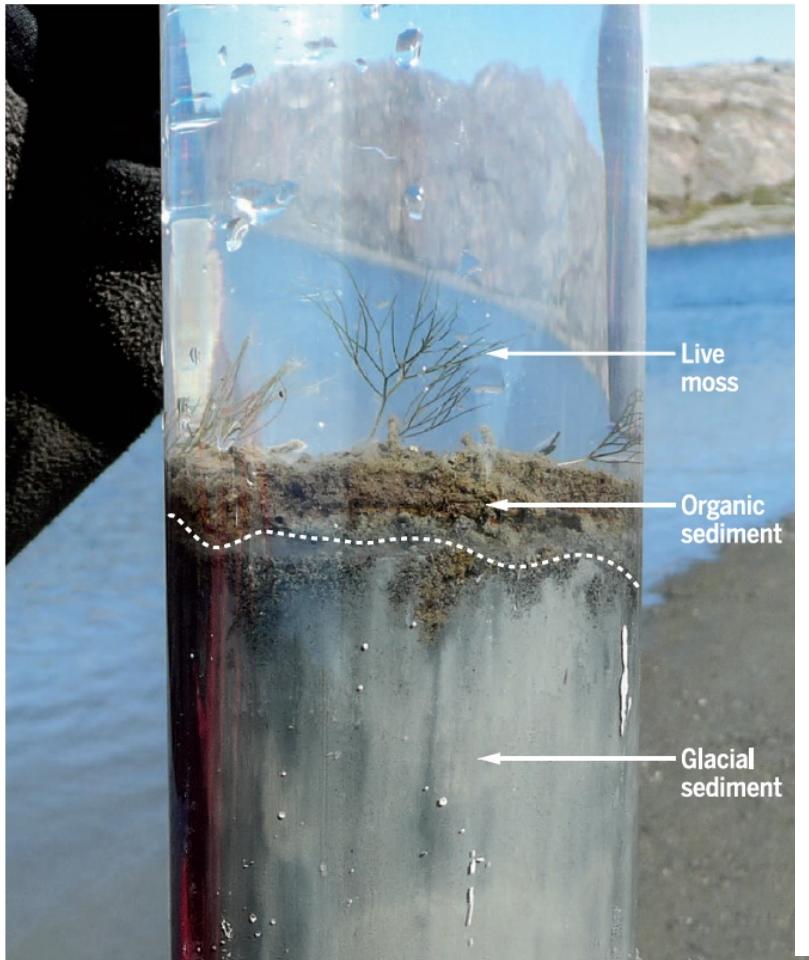
<http://www.geologyin.com/2015/03/epoch-defining-study-pinpoints-when.html>

En geología se suelen caracterizar las épocas terrestres según registros estratigráficos...

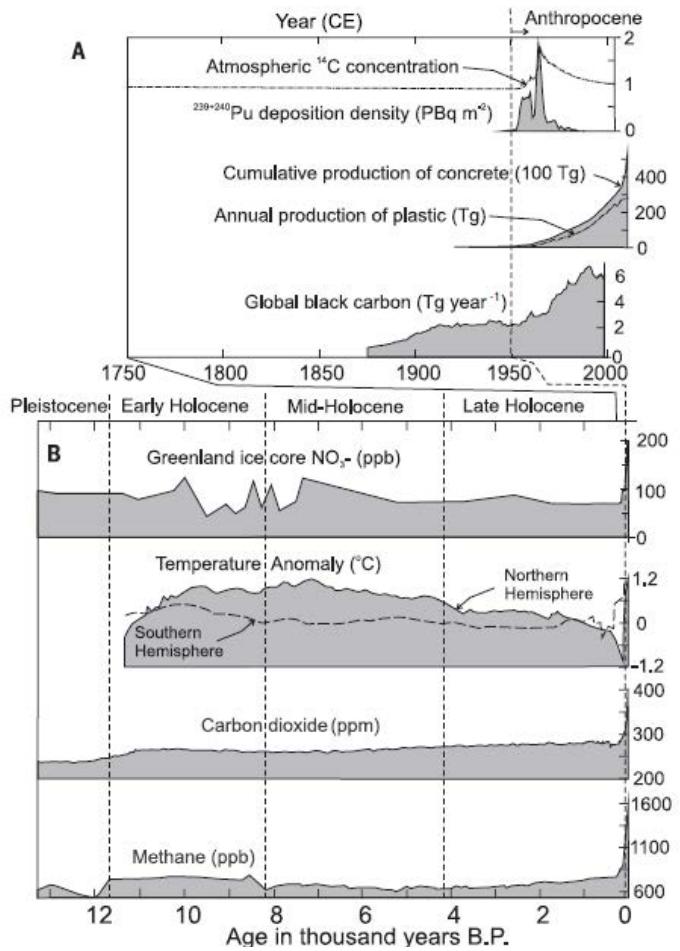
Así que:
Subcommission on Quaternary Stratigraphy
....debiera pronunciarse en 2016



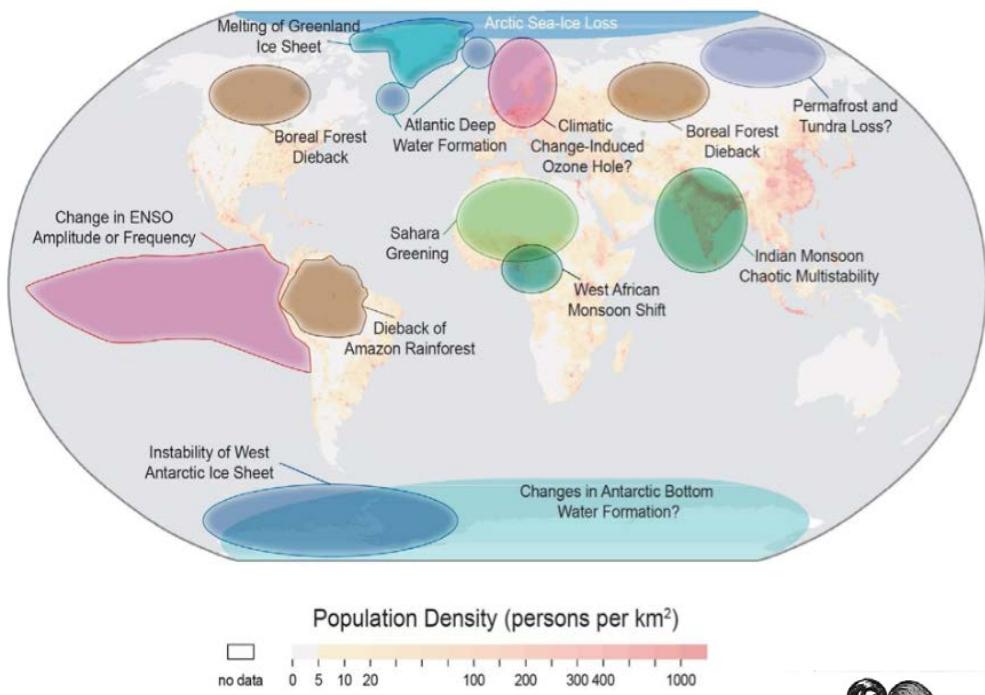
¿Se ve el “antropoceno”?



Waters, C. N., et al. (2016). "The Anthropocene is functionally and stratigraphically distinct from the Holocene." *Science* 351(6269): aad2622.

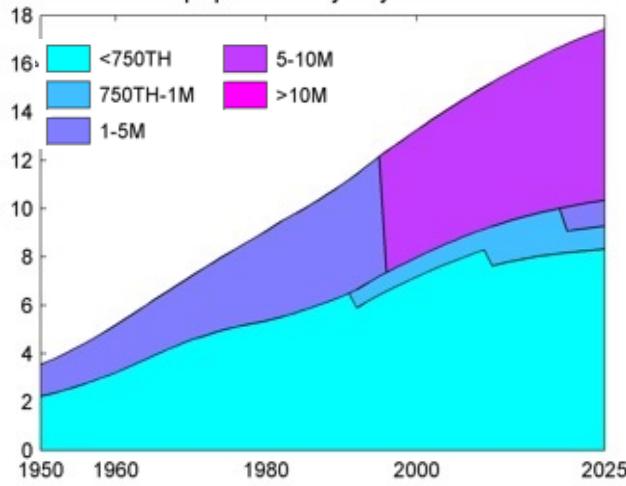
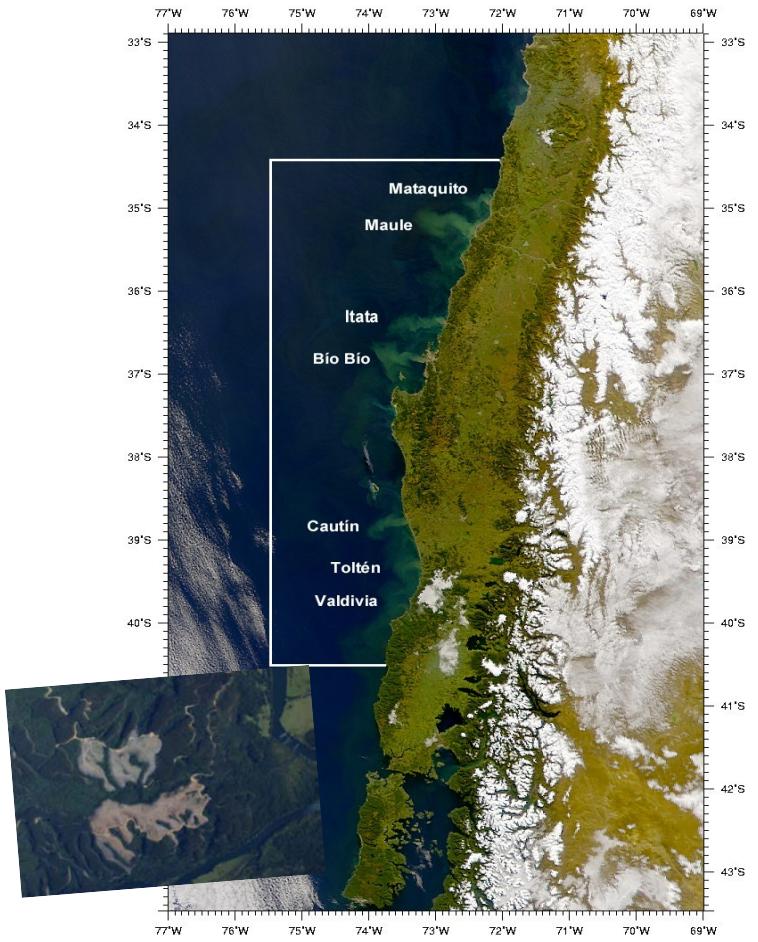


Claro que...



Los humanos siempre hemos alterado el entorno. Lo que ha cambiado es la tasa y el carácter global de los múltiples impactos.

Chile: Cambio de uso de suelos y urbanización



Algunos mensajes

- Entender la relación entre human@s y naturaleza es un tema de larga data
- Nuestra habilidad de modificar el entorno, desde la revolución industrial, se ha transformado en un forzante comparable a los naturales (antropoceno) dando lugar a cambios que ocurren en una tasa sin precedentes en la historia humana.
- Tanto la datación geológica como el concepto se discuten...sin embargo, el hecho de la causa permanece... **seguimos alterando el sistema, requerimos nuevos paradigmas**



“Scoop”

- Will Steffen visitará Chile en Agosto de 2016.



Sponsoring institution

¡Gracias!

laura@dgf.uchile.cl
<http://www.cr2.cl/>



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la Resiliencia CONICYT/
FONDAP/15110009



Welcome to the Anthropocene

from WelcomeAnthropocene PLUS 11 months ago / via Final Cut Pro NOT YET RATED

<http://vimeo.com/39048998>

LKG CR2 Periodistas 29/6-2016

Material recomendado

- El antropoceno en 3 minutos

<https://www.youtube.com/watch?v=fvgG-pxlobk>

- El antropoceno en más minutos

<https://www.youtube.com/watch?v=ABZjlfhNOEQ>

- IPCC & Comunicaciones

http://www.ipcc.ch/pdf/supporting-material/EMR_COM_full_report.pdf