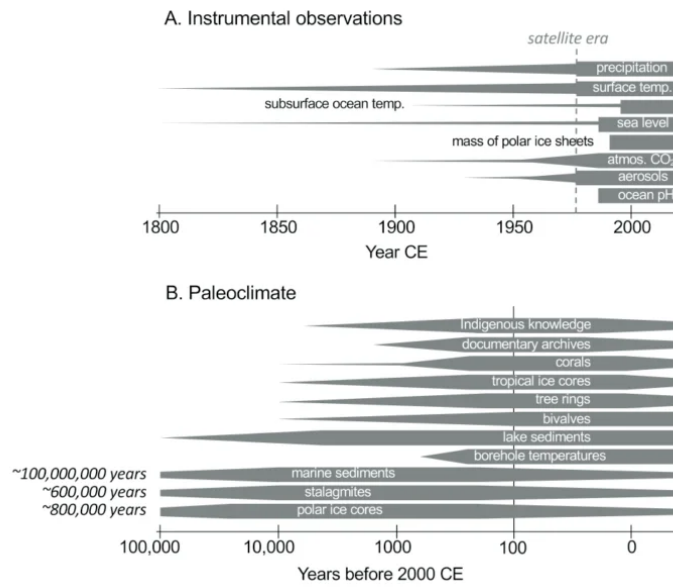


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IPCC 2021 – Evidence for Past Climate Change

According to the IPCC report for Policymakers “In 2019, atmospheric CO₂ concentrations were higher than at any time in at least 2 million years, and concentrations of CH₄ and N₂O were higher than at any time in at least 800,000 years. Since 1750, increases in CO₂ (47%) and CH₄ (156%) concentrations far exceed, and increases in N₂O (23%) are similar to, the natural multi-millennial changes between glacial and interglacial periods over at least the past 800,000 years.”¹



Source: IPCC¹

To gather information about the climate scientists need to use a wide range of sources. As can be seen on the graphic opposite, from 1800 onwards scientists can rely upon observations collected by various instruments. However to really understand climate change we need to examine longer term patterns going back thousands to hundreds of thousands of years. The evidence that we have for these can be taken from various sources as can be seen on graph B showing paleoclimatic sources of evidence. Paleoclimate is just a way of saying climate from the geological past.

Task:

Select one of the sources of instrumental observations and one of the paleoclimatic evidence and conduct some research into it.

Complete the tables to evaluate the methods of showing climate change.

Instrumental Evidence

Name of evidence type	
How the evidence is collected mentioning the instruments used and how they work.	
What does the evidence show about climate change?	
What are the strengths of this evidence for revealing climate change?	
What are the weaknesses or limitations of this evidence for revealing climate change?	
Images such as graphs, pictures of instruments or maps where the evidence is collected	

Paleoclimate Evidence

Name of evidence type	
How the evidence is collected mentioning the instruments used and how they work.	
What does the evidence shows about climate change?	
What are the strengths of this evidence for revealing climate change?	
What are the weaknesses or limitations of this evidence for revealing climate change	
Images such as graphs, pictures of instruments or maps where the evidence is collected	

Sources

1. IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press. P10. Accessed 28th November 2021 at [Sixth Assessment Report \(ipcc.ch\)](https://www.ipcc.ch/report/ar6/wg1/) <
<https://www.ipcc.ch/report/ar6/wg1/>>

Other resources based on the 2021 IPCC report
< <https://www.metlink.org/ipcc-2021-resources/>>