

History of public understanding of global warming -When were we able to recognize it?-

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In order for us to take action to limit global warming, it is important to understand "when the problem first became apparent" and "when we first learned about it". In this presentation, I will discuss the history of understanding by researchers, government agencies, mass media, and the general public, as revealed in compilations of literature (e.g., Weart (2019) *The Discovery of Global Warming* <https://history.aip.org/climate/index.htm>) and newspaper databases.

Researchers' understanding dates back to J. Fourier's study on the greenhouse effect in the Earth's atmosphere in 1824, but the 1938 report by G.S. Callender appears to be the first to present and predict specific warming data (Hawkins and Jones, 2013. *RMetS*, 139, 1961- 1963). In Japan, Yamamoto (1957, *Meteorological Research Notes*, 55, 113-117.) is considered to be an early report (Tomari, 2018. JpGU prep. MZZ40-02).

As a governmental organization, the Japan Meteorological Agency revised its long-term forecast from "colding" to "warming" in the late 1970s and early 1980s.

In terms of books for the general public, a boundary may be drawn between the sales of 80,000 copies of "The Ice Age is Coming" in 1976 and the publication of translated books on global warming in Japan in 1983 and 1984.

As for the mass media, the term "global warming" has been used in foreign newspapers since the 1960s, but it did not really increase until 1988, the year the IPCC was established. The term "global warming" has had several peaks since then, but the 1997 and 2007 peaks can be attributed to the Kyoto Protocol and A. Gore's "An Inconvenient Truth" respectively. In Japanese newspapers, the use of the term "global warming" increased slightly around 1975, and then increased rapidly from 1988, as in the case of foreign newspapers. On the other hand, the term "global cooling" was used from the 1960s to 1983.

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