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NEWS

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FOR IMMEDIATE RELEASE**U.S. National Academy of Sciences, U.K. Royal Society Release Joint Publication on Climate Change**

WASHINGTON -- The U.S. National Academy of Sciences and the Royal Society, the national science academy of the U.K., released a [joint publication](#) today in Washington, D.C., that explains the clear evidence that humans are causing the climate to change, and that addresses a variety of other key questions commonly asked about climate change science.

"As two of the world's leading scientific bodies, we feel a responsibility to evaluate and explain what is known about climate change, at least the physical side of it, to concerned citizens, educators, decision makers and leaders, and to advance public dialogue about how to respond to the threats of climate change," said NAS President Ralph J. Cicerone.

"Our aim with this new resource is to provide people with easy access to the latest scientific evidence on climate change, including where scientists agree and where uncertainty still remains," added Sir Paul Nurse, president of the Royal Society. "We have enough evidence to warrant action being taken on climate change; it is now time for the public debate to move forward to discuss what we can do to limit the impact on our lives and those of future generations."

Climate Change: Evidence and Causes, written and reviewed by leading experts in both countries, lays out which aspects of climate change are well-understood, and where there is still uncertainty and a need for more research.

Carbon dioxide (CO₂) has risen to levels not seen for at least 800,000 years, and observational records dating back to the mid-19th century show a clear, long-term warming trend. The publication explains that measurements that distinguish between the different forms of carbon in the atmosphere provide clear evidence that the increased amount of CO₂ comes primarily from the combustion of fossil fuels, and discusses why the warming that has occurred along with the increase in CO₂ cannot be explained by natural causes such as variations in the sun's output.

The publication delves into other commonly asked questions about climate change, for example, what the slower rate of warming since the very warm year in 1998 means, and whether and how climate change affects the strength and frequency of extreme weather events.

Many effects of climate change have already become apparent in the observational record, but the possible extent of future impacts needs to be better understood. For example, while average global sea levels have risen about 8 inches (20 cm) since 1901, and are expected to continue to rise, more research is needed to more accurately predict the size of future sea-level rise. In addition, the chemical balance of the oceans has shifted toward a more acidic state, which makes it difficult for organisms such as corals and shellfish to form and maintain their shells. As the oceans continue to absorb CO₂, their acidity will continue to increase over the next century, along with as yet undetermined impacts on marine ecosystems and the food web.

Even if greenhouse gas emissions were to suddenly stop, it would take thousands of years for atmospheric CO₂ to return to its levels before the industrial era. If emissions continue unabated, future climate changes will substantially exceed those that have occurred so far, the publication says.

The authoring committee offers this brief explanation of the science of climate change to help inform policy debates about the choices available to nations and the global community for reducing the magnitude of climate change and adapting to its impacts. The publication is available to download for free at www.nap.edu and as an interactive website at <http://nas-sites.org/americasclimatechoices/events/a-discussion-on-climate-change-evidence-and-causes/>.

The project was sponsored by the Raymond and Beverly Sackler U.S.-U.K. Scientific Forum. The National Academy of Sciences is a private, independent nonprofit institution that provides science, technology, and health policy advice under a congressional charter granted to NAS in 1863. For more information, visit <http://national-academies.org>.

The Royal Society is a self-governing fellowship of many of the world's most distinguished scientists drawn from all areas of science, engineering, and medicine. The society's fundamental purpose, reflected in its founding charters of the 1660s, is to recognize, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity. For further information, visit <http://royalsociety.org>.

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U.S. NATIONAL ACADEMY OF SCIENCES AND THE ROYAL SOCIETY

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