

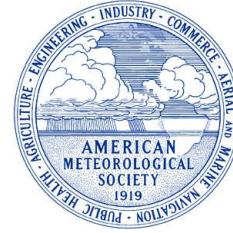
**AMERICAN METEOROLOGICAL SOCIETY  
NEWS RELEASE**

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**New AMS Statement on Climate Change: Climate is Changing; Humans Play a Role**

Despite uncertainties, there is adequate evidence from observations and interpretations of climate simulations to conclude that the atmosphere, ocean, and land surface are warming; that humans have significantly contributed to this change; and that further climate change will continue to have important impacts on human societies, on economies, on ecosystems and on wildlife through the 21<sup>st</sup> century and beyond, according to a new information statement on climate change issued by the American Meteorological Society today. The AMS is the nation's leading professional society for those involved in the atmospheric and related sciences

The AMS statement addresses the basic questions of how is climate changing; why is climate changing; how will the climate change in the future; and how can climate change be projected in the future? The statement is available online at <http://www.ametsoc.org/POLICY/2007climatechange.html>

According to the statement, the global mean temperatures have been rising steadily over the last 40 years, with the six warmest years since 1860 occurring in the last decade. Regionally, the warming trend is greatest in northern latitudes, over land and at night. Decreases in Arctic sea ice have been observed and most studies indicate that ice loss has recently accelerated at the margins of Greenland and the West Antarctic ice sheet, whereas the East Antarctic ice sheet and the Greenland interior appear to be gaining mass.

In the U.S. most of the observed warming has occurred in the West and in Alaska. However, there are regional variations in the signature of climate change, with warming in the western U.S. but little or no annual temperature change in the southeast U.S. in recent decades. Temperature rises have significant hydrologic effects. Freezing levels are rising in elevation, rain occurs instead of snow at mid-elevations, spring maximum snowpack is decreasing, snowmelt occurs earlier, and the spring runoff that supplies over two-thirds of the western U.S. streamflow is reduced.

According to the statement, evidence for warming is also observed in seasonal changes with earlier springs, longer frost-free periods and longer growing seasons, and shifts in natural habitats and in migratory patterns of birds. Sea levels are rising around the world, and glaciers are generally in retreat. A component of sea level rise is attributed to expansion due to a long-term increase in ocean heat content. The impacts of even small rises in sea level on coastal zones are expected to be severe, particularly in conjunction with storm surges associated with vigorous weather systems.

The AMS statement also notes that climate has changed throughout geological history, for many natural reasons such as changes in the sun's energy received by the Earth arising from slow orbital changes, or changes in the sun's energy reaching the Earth's surface due to volcanic eruptions. In recent decades, humans have increasingly affected local, regional, and global climate by altering the flows of radiative energy and water through the Earth system (resulting in changes in temperature, winds, rainfall etc.). Indeed, strong observational evidence and results from modeling studies indicate that, at least over the last 50 years, human activities are a major contributor to climate change.

The statement confirms that climate will continue to change due to natural and human causes. Numerical models show that changes in the means and extremes of temperature and precipitation in response to increasing greenhouse gases can be projected over decades to centuries even though the timing of individual weather events cannot be projected. However, it is noted that unlike daily weather forecasts, there is limited historical basis of experience on which to judge the accuracy of climate projections and confidence must be assessed by other methods such as deduction from prehistoric paleoclimate evidence, and careful process-study observations of the causal chain between energy flow changes and climate pattern responses.

The statement concludes that there will be inevitable climate changes from the greenhouse gases already added to the Earth system. Their effect is delayed several decades because the thermal inertia, or sluggishness, of the oceans ensures that the warming lags behind the driving forcing. For the next several decades there is a clear consensus on projected warming rates from human influences among different models and different emission scenarios.

The informational statements issued by the AMS are designed to provide a trustworthy, objective and scientifically up-to-date explanation of scientific issues of concern to the public at large. This summary of the current state of scientific understanding is based on the peer-reviewed scientific literature.

The AMS statement is consistent with the vast weight of current scientific understanding as expressed in assessments and reports from the Intergovernmental Panel on Climate Change, the U. S. National Academy of Sciences, and the U. S. Climate Change Science Program. All these reports recognize the uncertainties in climate projections, and identify the scientific work needed to reduce those uncertainties. Although the statement has been written in the context of concerns in

the United States, the underlying issues are inherently global in nature, according to the AMS.

The American Meteorological Society ([www.ametsoc.org](http://www.ametsoc.org)) is the nation's leading professional organization for those involved in the atmospheric and related sciences. Founded in 1919, the AMS has more 11,000 international members, organizes nearly a dozen scientific conferences annually, and publishes nine peer-reviewed journals.

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