



Paleontological Society Position Statement on Modern Climate Change

It is the position of the Paleontological Society that the science documenting ongoing climate change is sound, and that it indicates an unprecedented rate of global warming and associated environmental impacts. Further, the scientific evidence indicates that global warming is being driven by increase in the atmospheric concentration of greenhouse gases, primarily carbon dioxide and methane. Lastly, the primary reason for the increase in greenhouse gases is the extraction and consumption of fossil fuels, including coal, petroleum, and natural gas. The body of data, theory, and modeling that forms the foundation of this understanding is scientifically overwhelming and has been thoroughly reproduced and tested. Although scientific understanding of ongoing climate change will continue to evolve and expand, and may require rejection or adjustment of current knowledge, the main direction points unequivocally to the conclusion that our planet is warming at an unprecedented rate and that human activity is the cause.

As paleontologists, we are historians of the Earth-life system as preserved in the rock record. Throughout its history, prior to the evolution of human beings and the development of industrialized civilization, the Earth experienced both much warmer and much colder states than the present day. However, the Earth has only rarely experienced global-scale changes of comparable magnitude to those it is undergoing now, and such extreme events were associated with mass extinction and substantial disruption of global ecosystems. If current trends are not curbed, the ongoing human-caused disruption to the Earth-life system has the potential to be comparable in scale to the impact of the asteroid that impacted the Earth 66 million years ago or the eruption of a sea of lava in Siberia 251 million years ago. Those events and others like them led to continental-scale fires, acidification of the oceans, and severe swings in surface temperature, which contributed to the loss of 70% to 90% of species alive at the time (mass extinction events). Recovery of environments and ecosystems took millions of years—many times longer than the few thousand years that modern civilization has existed.

For much of the twentieth century, the primary commercial application of paleontological knowledge has been biostratigraphy (the use of fossils to correlate rock units and resolve geologic time) in service of finding and extracting fossil fuels. However, as our understanding of the history of the Earth-life system has increased and improved, the same knowledge that aided in the exploitation of oil, gas, and coal has revealed how extreme modern climate change is in the context of our planet's history. Science that is fundamentally grounded in paleontology unequivocally indicates that if current global climate change continues at its current rate, the consequences for our wellbeing are likely to be catastrophic and effectively unrecoverable. Therefore, the Paleontological Society resolves to include consideration of our actions as a professional society on greenhouse gas emissions and to encourage all of its members to take

action to reduce greenhouse gas emissions in their personal activities. In addition, the Society and its members will act to ensure that accurate information about the current state of scientific knowledge concerning climate change and its potential effects on the world and its people be shared with other scientists, the public, and policymakers.