

including scientific modelling, furthered the hypothesis that catastrophic cooling could occur on Earth in these circumstances.

In 1982, scientists Paul Crutzen of West Germany, and John Birks of the United States published the first major study of the effects of smoke generated by a nuclear war. They concluded that forest fires caused by a major nuclear exchange would emit hundreds of millions of tonnes of smoke which would severely reduce the amount of sunlight reaching the earth's surface.

Based on this study, a group of U.S. scientists and biologists undertook the first comprehensive analysis of the phenomenon which came to be known as Nuclear Winter. They examined not only the climatic effects of nuclear war but also for the first time possible biological effects and the impact on human life itself.

This study, "The Long-Term Atmospheric and Climatic Consequences of a Nuclear Exchange" (known as "TTAPS" after the initials of the names of the authors: Turco, Toon, Ackerman, Pollock and Sagan), became the basis for a major scientific symposium in April 1983 which brought the Nuclear Winter theory to international attention. A group of more than one hundred scientists from the United States and other countries, reviewing the findings of the TTAPS study, declared their general agreement with the Nuclear Winter hypothesis.

A number of biological scientists, examined the potential impact of post-nuclear war conditions on the Earth's life-support systems. Discussing the effects on plant life, animal life, marine and fresh water eco-systems, climate, weather and soil preservation, they agreed that the effects of nuclear war "could be devastating to a degree previously unforeseen." They could not rule out the possibility that:

"...the long-term biological effects of nuclear war could cause the extermination of humankind and most of the planet's wildlife species."

In order to make the startling details of Nuclear Winter widely known to the public, as well as other scientists and policy-makers, a major conference was convened in Washington in October 1983. The "Conference on the World after Nuclear War" attracted more than 600 participants, including scientists, ambassadors and officials from more than twenty countries, educators, religious leaders, business people, environmentalists and arms control, foreign policy and military specialists. This conference brought the Nuclear Winter theory out of the laboratories and into the headlines.