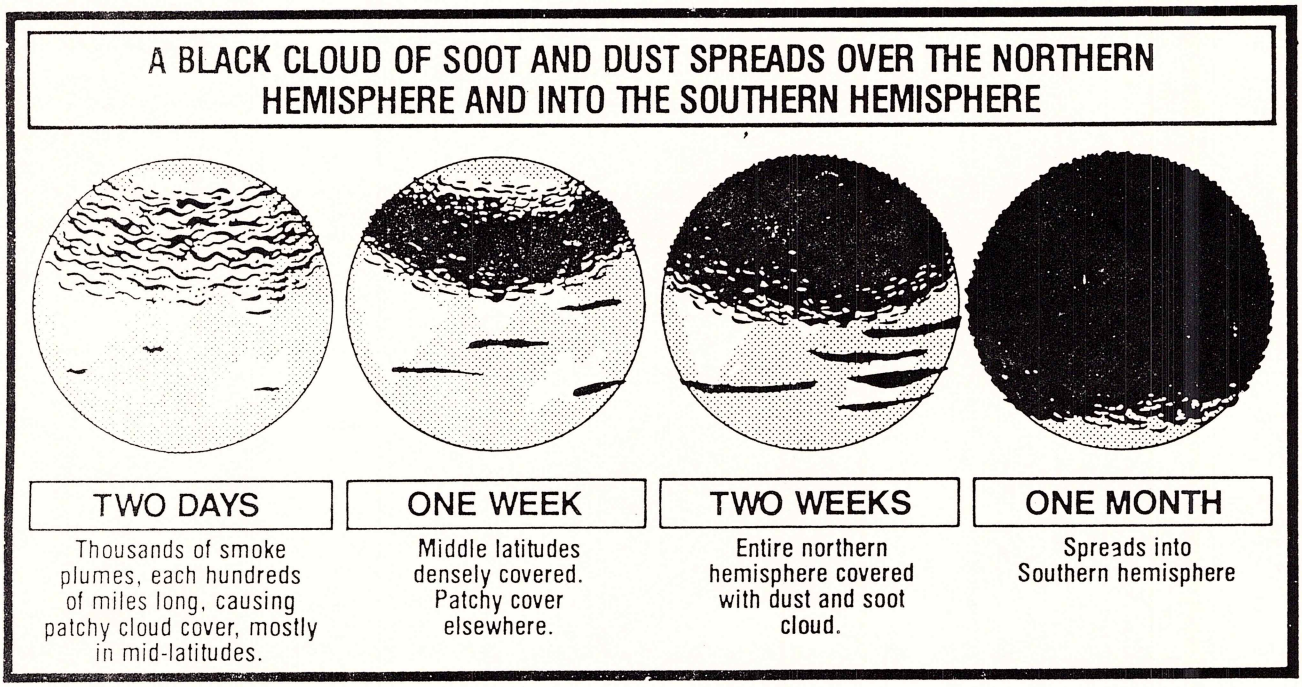
The Nuclear Winter



Nuclear war: a Martian-eye view. The climatic effects of nuclear war are almost certain to spread from the Northern Hemisphere with its (relatively) high concentration of nuclear targets, big cities and combatant nations, to the (relatively) non-aligned and non-nuclear South. This revelation is one of the most important political conclusions of the nuclear winter findings and could lead to renewed international pressure for disarmament.

In 1982-83, a group of scientists from three research centres in the US made a series of new studies on the effects of nuclear war on the earth's atmosphere, with particular attention to the effects of dust and smoke from fires caused by nuclear explosions. The preliminary results of these studies were of dramatic significance. In April 1983, a five-day Conference, involving some 100 nuclear and atmospheric physicists, and biologists, reviewed these results. It emerged that two major US and USSR research groups had come to identical results.

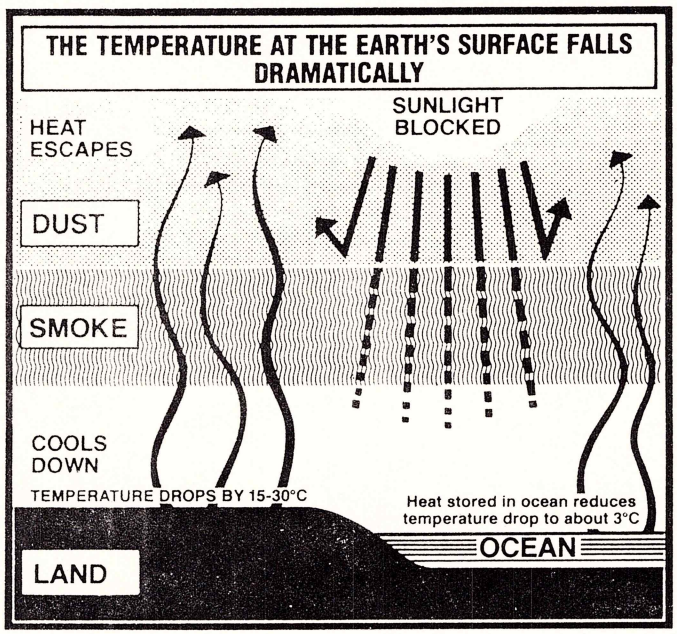
These studies showed that if there is a nuclear war in which 5000 megatons (only about a third of the nuclear arsenals of the US and USSR) are exploded, with 20% of the explosive power concentrated on urban/industrial targets in the Northern Hemisphere, then:

- An unbroken pall of darkness could cover the Northern Hemisphere, spreading rapidly into the Southern Hemisphere. Within a week after the war, the amount of sunlight at ground level could be reduced to just a few per cent of normal, which would halt or severely limit plant growth. The consequence of this would cascade through all food chains.
- A harsh 'nuclear winter' could result. There could be a rapid and dramatic drop in land temperatures to sub-freezing levels for several months, large disturbances in global circulation patterns and dramatic changes in local weather. Even if the war were to occur in the summer, many areas might be subject to continuous snowfall for months. This would substantially reduce the chances of human survival. A spring or summer war could kill or damage virtually all crops in the Northern Hemisphere.
- Exposure to radioactive fallout could be worse than previously predicted. The drastic effects of smoke upon the atmosphere could cause fallout on an intermediate timescale, extending over many days and weeks.

In addition to the heavy fallout downwind of groundbursts, this intermediate fallout would expose people in the Northern mid-latitudes to an additional radioactive dose, increasing the probability of infectious disease, cancer, genetic and embryonic effects.

- Fires would have serious and unanticipated consequences. Uncontrolled fires could sweep over wide areas. Urban fires would generate large amounts of deadly toxins from the combustion of synthetic materials.
- Ozone depletion could increase exposure to ultra-violet light. After smoke cleared, UV doses roughly 1.6 times normal could be reaching the surface. Immune systems of human and other animals are suppressed by low doses of UV. This would lead to an increase in disease. Protracted exposure may also lead to blindness.
- Tropical forests could disappear. If darkness or cold, or both, were to become widespread in the tropics, the tropical forests, which are the major reservoir of organic diversity, could largely disappear. This could lead to the extinction of the majority of species on earth.

It is even thought that similar effects could result from relatively 'small' nuclear exchanges down to an attack of 100



Smitty Lee Ives

Mushroom cloud: All dust and smoke from nuclear explosions can contribute to the 'nuclear winter' syndrome. But most damage would be done by soot and smoke which *absorbs* sunlight. Dust, in the higher reaches of the atmosphere, will also *reflect* sunlight. Much of the dust and smoke will be radioactive. The smoke will also be chemically active, bringing about unpredictable chemical reaction in the upper atmosphere.

megatons on cities. *These predictions demonstrate the ultimate absurdity of civil defence.*

The Home Office continues to try to justify its 'civil defence' measures by arguing that 'there will be millions of survivors' after a nuclear war and that measures must be taken for 'national recovery' within a framework of proper government and 'law and order'. No doubt many of the top political and military people imagine that *they* will be safe in their deep bunkers and can come out and rule the country in the aftermath. Well-to-do people, especially in rural areas far from known targets, who are providing themselves with elaborate and expensive nuclear shelters, may have similar illusions.

The real nature of 'the world after nuclear war' needs to be understood clearly, especially by Local Authorities that may be forced by Government legislation to take part in the misleading 'civil defence' exercises organised by the Home Office.

Resources

SANA have the following available:

- ***Official Summary of Conference Findings*** from the Washington Conference held in October 1983. 6 A4 pp.
- ***Science papers on the Nuclear Winter*** including the 'TTAPS' paper (physics), the Ehrlich et al paper (biology), presented at the Washington Conference. Other papers available on request including the Anne Ehrlich paper, printed in the Bulletin of the Atomic Scientists April 1984
- ***Carl Sagan Video 'The Global Atmosphere'*** 5 minute video presentation used by Carl Sagan to present visually the 'nuclear winter' concept. VHS
- ***SANA Video "NUCLEAR WINTER"*** How could nuclear war trigger a climatic catastrophe? What would be the consequences for plants and animals – and for human survival? What are the policy implications for nuclear disarmament and for Civil Defence? How did a poet see the impact of a relatively small climatic disturbance in 'The lost summer of 1816'? This 30 minute video, presented by Prof. Michael Pentz, Dr. Irene Ridge and Dame Peggy Ashcroft should provide some of the answers. (VHS) Available from SANA, 112 Newport Road, New Bradwell, Milton Keynes MK13 0AA.
- ***Slide presentation and speakers notes*** A chronological visual presentation in some detail of 'Nuclear winter'.
- ***Nuclear Winter – A New Dimension For The Nuclear Debate*** 60 page A5 booklet covering: Conclusions of the Washington Conference; Research work before and after; Areas of uncertainty and criticism; Implications for nuclear strategy, civil defence and the peace movement
- ***SANA Information Leaflet*** Describing the 'Nuclear winter' findings and implications for Peace Movement. 4 A5 pp. Available from SANA, 112 Newport Road, New Bradwell, Milton Keynes MK13 0AA.
- ***A Mass Leaflet on the Nuclear Winter*** Camera ready art work for a mass leaflet (A4 folded 3 times). Space for local group information. Suitable for groups to reproduce and distribute.

CND Publications has published a leaflet on the Nuclear Winter. This is available from CND Sales, 227 Seven Sisters Road, London N4 2DA for £2.70 per 100, including postage.