

Skin Cancer and Other UV-Related Hazards

Depletion of the ozone layer has already increased the risk of skin cancer to Canadians by over 15%. Each 1% loss of ozone leads to a 3–4% increase in non-melanoma skin cancer, a 0.6% increase in cataracts, and a 1% reduction in the yield of UV-sensitive crops such as wheat, rice, corn and soybeans. There are other problems such as suppression of the immune system, suspected increases in malignant melanoma, degradation of industrial materials such as plastics and paints, and a threat to the aquatic food chain given the susceptibility of phytoplankton to UV radiation.

Assessing the Risk

The catastrophic consequences of ozone depletion and the failure of atmospheric models even to predict the ozone hole over the Antarctic are a strong driving force for international cooperation. Inaction in the face of scientific uncertainty can have profound consequences.

Scientific uncertainty does not mean we have to wait for more research to take action. We do not need to know everything in order to do anything. The relevant policy question is not whether the scientists are right but whether policy-makers can afford to be wrong...

There is no insurance policy that will provide adequate coverage should we be wrong.

B. Global Warming

The Phenomenon

The Earth is warmed by radiation received from the sun. About 30% of the incoming radiation is reflected back into space while the remainder is absorbed by gases in the atmosphere and by the surface of the planet. The energy trapped by the gases raises the average temperature of the Earth's atmosphere. This natural and well-understood phenomenon is known as the "greenhouse effect" because of its similarity to the action of a greenhouse. The gases which exhibit this behaviour are often referred to as "greenhouse gases".

The principal natural greenhouse gases are water vapour (H₂O) and carbon dioxide (CO₂). Without them, the average air temperature at ground level would be approximately –18°C, not the +15°C we experience. This natural greenhouse effect is vital to the presence of life on the Earth.