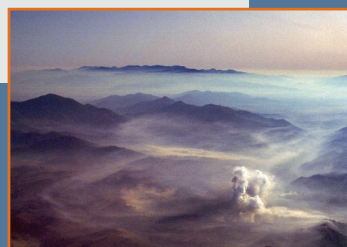


## Potential Adaptation Strategies for Moderating Impacts of Climate Change on Human Health and Welfare



| Climate Event  | Examples of Possible Impacts on Health   | Likelihood of Impacts Given Climate Event Occurs                              | Potential Adaptation Strategies  |
|--|--|---|--|
| More heat waves and extreme high temperatures              | Heat stress/stroke.<br>Uncertain impacts on mortality  | Very likely in Midwest and northeast urban centers                            | Early watch and warning systems and installation of cooling systems in buildings   |
| Changes in precipitation, especially extreme precipitation | contaminated water and food supplies with associated gastrointestinal illnesses including salmonella and giardia   | Likely in areas with out-dated or over-subscribed water treatment plans       | Improve infrastructure to guard against combined sewer overflow; public health response to include "boil water" advisories   |
| Hurricane and storm surge                                  | Injuries from flying debris and drowning / exposure to contaminated flood waters and to mold and mildew / exposure to carbon monoxide poisoning from portable generators   | Likely in coastal zones of the southeast Atlantic and the Gulf Coast          | Increase knowledge and awareness of vulnerability to climate change; public health advisories in immediate aftermath of storm; coordinate storm relief efforts to insure that people receive necessary information for safeguarding their health |
| Temperature-related effects on ozone                       | Ozone concentrations more likely to increase than decrease; possible contribution to cardiovascular and pulmonary illnesses, including exacerbation of asthma and chronic obstructive pulmonary disorder (COPD) if current regulatory standards are not attained | Likely in urban centers in the mid-Atlantic and the northeast                 | Public warning via air quality action days; encourage public transit, walking and bicycling to decrease emissions  |
| Wildfires  | Degraded air quality, contributing to asthma and COPD aggravated   | Likely in California, the Intermountain West, the southwest and the southeast | Public health air quality advisories   |

The information in this factsheet is drawn from CCSP's Synthesis and Assessment Products 4.6 (Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems) and 3.3 (Weather and Climate Extremes in a Changing Climate).



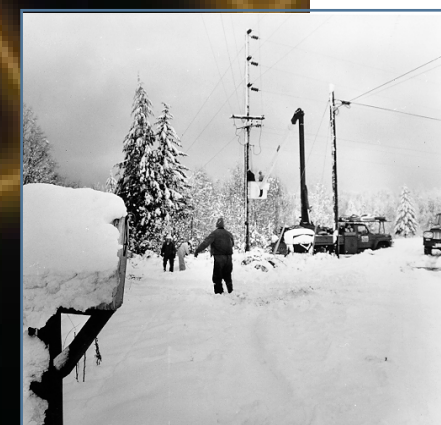
Middle image on front page from freeimages.co.uk, other front page images from NOAA's Portland OR forecast office



For further information and to access other CCSP information, go to [www.climatechange.gov](http://www.climatechange.gov)

# Human Health and Welfare in a Changing Climate

## Summary and Findings of the U.S. Climate Change Science Program



Climate variability and change challenge even the world's most advanced societies. At a very basic level, climate affects the costs of providing comfort in our homes and work places. A favorable climate can provide inputs for a good life: adequate fresh water supplies; products from the ranch, the farm, the forests, the rivers and the coasts; pleasure derived from tourist destinations and from nature, biodiversity, and outdoor recreation.

Climate not only supports the provision of many goods and services, but also affects the spread of some diseases and the prevalence of other health problems. It is also associated with threats from extreme events and natural disasters such as tropical storms, riverine and coastal flooding, wildfires, droughts, wind, hail, ice, heat, and cold.



