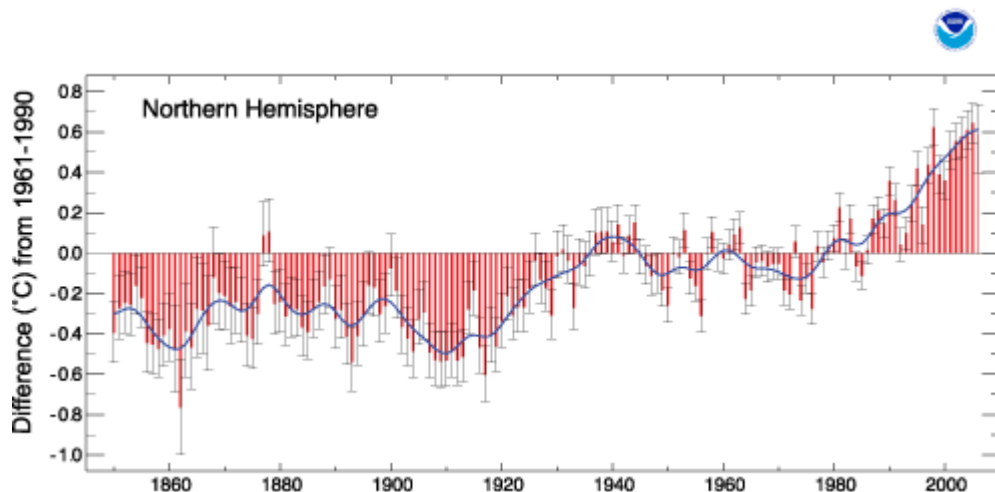


Climate Change and Human Health

In the Arctic, climate change is more than just a topic of conversation: it's a fact of life. Arctic communities have already begun to feel the impacts of climate change, both large and small. Land erosion, melting permafrost, and flooding are forcing several Alaskan villages to consider relocation.



The Arctic, like most other parts of the world, has warmed substantially over last few decades. This warming trend is projected to continue, and may lead to significant economic and cultural upheaval particularly for the indigenous peoples of the Arctic. It is anticipated that Arctic communities will be disproportionately impacted by climate change, as many residents live in small communities with limited economic infrastructure. Residents are dependent on the land and sea for subsistence and therefore remain highly vulnerable to environmental change.



Environmental changes will affect Arctic residents both directly and indirectly. Direct health effects of climate change will result from changes in ambient temperature. As ambient temperature increases, the incidence of hypothermia and associated morbidity and mortality may decrease. Conversely hyperthermia may increase, particularly among the very young and the elderly. More significantly, unintentional injury, mostly related to extreme events (flooding, storms) and subsistence hunting and fishing—already a significant cause of mortality among Arctic residents—

may increase. Climate change will also cause indirect health effects, which may include mental and social stress related to loss of community and culture. In addition, changes in migratory patterns and other factors may result in reduced access to traditional foods, which may force indigenous communities to depend increasingly on nontraditional and often less healthy Western foods. These will most likely result in increasing rates of modern diseases associated with processed foods, such as obesity, diabetes, cardiovascular diseases, and outbreaks of food-borne infectious diseases associated with imported fresh and processed foods. Other indirect effects include the potential increases in certain food- and water-borne infectious diseases related to damage to the sanitation infrastructure, and the potential emergence of other climate sensitive vector borne infectious diseases.



The potential impact on human health will differ from place to place depending on regional differences in climate change as well as variations in health status and adaptive capacity of different populations. Rural arctic residents in small isolated communities, with fragile support systems, little infrastructure and marginal to non-existent public health systems may be the most vulnerable. In addition, people who depend on subsistence hunting and fishing will be vulnerable to changes that affect targeted species. Climate stress and shifting animal populations may also create conditions for the spread of certain infectious diseases from animals to humans.



An international workshop on climate change and human health in the Arctic was held in Anchorage, Alaska in February 2008. This workshop, called *Emerging Threats and Responses of Arctic Communities to Climate Change*, was convened as part of the 2008 Alaska Forum on the Environment (AFE, www.akforum.com). The main conclusions of the workshop were that:

1. Much research remains to be done on the relationship between climate change and individual and community health;
2. Climate will continue to influence public health in small and remote communities of the Arctic; and
3. There is an urgent need for adopting community-based monitoring strategies that will identify both emerging threats and opportunities.

The proceedings of this workshop can be accessed at the Arctic Human Health Initiative Web Site at www.arctichealth.org/ahhi/

On February 25th 2009, the IPY Joint Committee will release a report on 'The State of Polar Research'. In the lead-up to this event, major IPY research projects are releasing information for the press, and making themselves available for media enquiries. A wide range of projects will be profiled reflecting the diversity of IPY. For more information, please visit http://www.ipy.org/index.php?ipy/detail/feb09_projects/