

Climate Change: World-Wide, National and Montana Perspectives

The APA Policy Guide on Planning and Climate Change published the following general scientific findings in 2009 that have implications for Montana and Helena:

Finding 1: *Climate change largely results from a buildup of carbon dioxide and other GHG concentrations in the atmosphere. This buildup is principally caused by human activities, including fossil fuel burning for residential and industrial processes and transportation, changes in development, and deforestation. Global GHG emissions created by human activities have grown dramatically, with an increase of 70% between 1970 and 2004.*

Finding 2: *Warmer winters with related snow and ice melts in the arctic will create higher sea levels. The impacts of rising sea levels will be flooding in lowland areas and submersion of coastal beaches. In addition, submersion will allow saltwater intrusion into groundwater and freshwater estuaries, as well as upstream from where rivers now empty into oceans. Longer and deeper droughts coupled with high temperatures may result in flooding and effect water supplies in many regions. The loss of habitat caused by these changes will affect many species of plants and animals. Because of increased urbanization and the speed with which climate changes are expected to occur, many, if not most, species will be adversely affected and threatened.*

Finding 3: *Advances in scientific analysis show that discernible human influences extend beyond average temperature to other aspects of climate such as: (1) sea level rise during the last half of the 20th century; (2) changes in wind patterns, affecting extra-tropical storm tracks and temperature patterns; (3) increased extreme temperatures both hot and cold; and (4) increased risk of heat waves and drought and frequency of heavy precipitation events.*

Finding 4: *Despite current climate change mitigation policies and related sustainable development practices, global GHG emissions will continue to grow over the next few decades. Human induced global warming and sea level rise will continue due to the time scales associated with climate processes and how they respond to changes. Even if GHG concentrations are stabilized the response will be slow. Global warming is likely to create impacts that are abrupt or irreversible, such as the elimination of certain animal species.*

Finding 5: *The ability of populations to adapt to the effects of climate change is intimately connected to social and economic development but is unevenly distributed across and within societies with greater impacts on the poorer and more vulnerable.*

Finding 6: *Neither adaptation nor mitigation alone can eliminate all climate change impacts; however, they can complement each other and together can significantly reduce the risks of climate change. It is possible that some of the impacts of climate change can be reduced, delayed or avoided by aggressive implementation of mitigation strategies. Mitigation efforts and investments over the next two to three decades will have a significant impact on achieving lower stabilization levels.*

Montana Climate Change Action Plan

Governor Schweitzer noted the scientific consensus on this issue as embodied by reports issued by the Intergovernmental Panel on Climate Change (IPCC) and the National Academy of Sciences. Climate models indicate that global average temperatures could rise from 3 to 10 degrees Fahrenheit by the end of this century. The IPCC predicts that such a warming will result in rising sea levels, increased rainfall rates, heavy precipitation events (especially over the higher latitudes), and higher evaporation rates that would accelerate the drying of soils following rain events. Other studies of the effects of climate change on the Rocky Mountain West cite the potential for prolonged drought, earlier snowmelt, reduced snow pack, more severe forest fires, and other harmful effects.²

² Agency Technical Work Group, State of New Mexico, Potential Effects of Climate Change on New Mexico, December 30, 2005. http://www.nmenv.state.nm.us/aqb/cc/Potential_Effects_Climate_Change_NM.pdf