

Predictions made and questions asked by scientists about climate change in Montana that may affect your community:

Water Resources

- Western Montana drains into the Columbia River system, and most of the remaining areas of the state drain to the east into the Missouri River or its major tributary, the Yellowstone River. Winter snow accumulation and spring melt are key processes that affect the runoff of all rivers within the state. A warmer climate would lead to earlier spring snowmelt and significant changes in stream flow across the seasons.

Weather

- Projections show temperature increases for Montana of 4-5 degrees year-round. Precipitation is estimated to increase by roughly 10% in all seasons except winter, when the range of estimated increase is 15-40%. What might this mean for your community?

Recreation

- Will people be able to ski in Montana in the year 2050? Where? How long? What does this mean for communities located near ski resorts?

Glaciers

- Researchers with the US Geological Survey have compiled data indicating that the largest glaciers in Montana's Glacier National Park will be gone in thirty years? Could this really happen? What does this mean for watersheds in the Rocky Mountains, Montana, and/or your community?

Agriculture

- The mix of crop and livestock production in the state is influenced by climatic conditions and water availability. In Montana, agriculture is a \$1.8 billion annual industry, one-half of which comes from livestock, mainly cattle. Just over 20% of the crop acreage is irrigated. The major crops in the state are wheat, barley, and hay.
 - Warmer climates and less soil moisture due to increased evaporation may increase the need for irrigation. How much do the ranchers and farmers surrounding your community rely on irrigation? What might water usage rates for irrigation look like in 2050? Will there be more or less farming/ranching in your community?
 - If there is a change in the growing season, what does that mean for the economy of Montana? Your community?

Forest Fires

- Hotter, drier weather could increase the frequency and intensity of wildfires in Montana. Milder winters could increase the likelihood of insect outbreaks and of subsequent fires in the dead fuel left after such an outbreak. Should your community be concerned?

Ecosystems

- Trees and forests are adapted to specific climate conditions, and as climate warms, forests will change. If conditions become drier, the current range and density of forests could be reduced and replaced by grasslands and pasture. What will this mean for Montana's wildlife?
- A warmer, wetter climate could lead to trees that are better adapted to these conditions such as fir and spruce. Forests could become more dense. Grass and rangeland could expand into previously forested areas along the eastern slope of the Rocky Mountains. What does this mean for Montana's logging industry? Recreational industry? Ranching?

Human Health

- Warming may expand the habitat and infectivity of disease-carrying insects. Mosquito populations could increase and conditions may become more favorable for disease transmission.
- Montana has irregular, intense heat waves. Higher temperatures and increased frequency of heat waves may increase the number of heat-related deaths and the incidence of heat-related illnesses. How many days over a 100 degrees Fahrenheit will there be in the year 2050? What might be the impacts of this on the elderly population in your community?