

# REGIONAL OVERVIEW

**T**here are both important commonalities and important differences in the climate-related issues and consequences faced around the country. For example, water is a key issue in virtually all regions, but the specific changes and impacts in the West, in the Great Lakes, and the Southeast will differ. Regional texture is thus critical in thinking through how to best respond to the changing climate we will face in the coming decades and century.

Twenty regional workshops involving a wide range of researchers and stakeholders helped identify key issues facing each region and began identifying potential adaptation strategies. This report groups the findings of these efforts into larger regions to offer a glimpse of the regional mosaic of consequences that are possible due to climate change and variability. The impacts highlighted here suggest that it is vital that people everywhere start to learn about climate impacts and consider them in their short- and long-term decisions about infrastructure, land use, and other planning. In many cases, research is needed to assess the feasibility, effectiveness, and costs of the adaptation strategies identified in the regional overviews.



## Alaska

Sharp winter and springtime temperature increases are very likely to cause continued thawing of permafrost, further disrupting forest ecosystems, roads, and buildings.

## Northwest

Increasing stream temperatures are very likely to further stress migrating fish, complicating restoration efforts.

## Mountain West

Higher winter temperatures are very likely to reduce snowpack and peak runoff and shift the peak to earlier in the spring, reducing summer runoff and complicating water management for flood control, fish runs, cities, and irrigation.

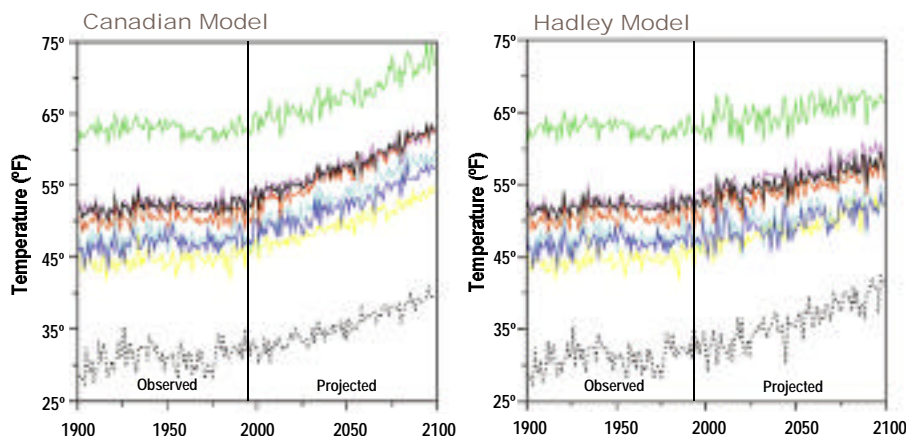


## Southwest

With an increase in precipitation, the desert ecosystems native to this region are likely to decline while grasslands and shrublands expand.

- Southeast
- West
- National
- Great Plains
- Midwest
- Northeast
- Northwest
- Alaska

Annual Average Temperature by Region



Average temperature is shown for each region in °F. Both the significant year-to-year variability and the projected upward slope of each line are clearly evident. Temperatures are projected to increase more in some regions than in others, with generally larger increases projected by the Canadian model scenario than by the Hadley model scenario.

### Midwest/Great Plains

Higher CO<sub>2</sub> concentrations are likely to offset the effects of rising temperatures on forests and agriculture for several decades, increasing productivity.

### Great Lakes

Lake levels are likely to decline, leading to reduced water supply and more costly transportation. Shoreline damage due to high water levels is likely to decrease.

### Northern and Mountain Regions

It is very probable that warm weather recreational opportunities like hiking will expand while cold weather activities like skiing contract.

### Northeast, Southeast, and Midwest

Rising temperatures are very likely to increase the heat index dramatically in summer, with impacts to health and comfort. Warmer winters are likely to reduce cold-related stresses.

### Appalachians

Warmer and moister air will very likely lead to more intense rainfall events, increasing the potential for flash floods.

### Southeast

Under warmer wetter scenarios, the range of southern tree species is likely to expand. Under hotter and drier scenarios, it is likely that far southeastern forests will be displaced by grasslands and savannas.

### Southeast Atlantic Coast

It is very probable that rising sea levels and storm surge will threaten natural ecosystems and human coastal development and reduce buffering capacity against storm impacts.

### Great Plains

Prairie potholes, which provide important habitat for ducks and other migratory waterfowl, are likely to dry up in a warmer climate.

### Southeast Gulf Coast

Inundation of coastal wetlands will very likely increase, threatening fertile areas for marine life, and migrating birds and waterfowl.

### Islands

More intense El Niño and La Niña events are possible and are likely to create extreme fluctuations in water resources for island citizens and the tourists who sustain local economies.

