Introduction to the Regions

Landscapes, ecosystems, communities, and economies vary dramatically across our country's disparate regional geographies, but also share many common attributes. Each region is affected by changes in the global and national economy; each adds to our complex and multifaceted culture; each is connected to the same integrated infrastructure – such as transportation, communications, and energy systems – and they are all affected by the changing climate.

In some regions, the evidence of climate change impacts is more obvious than others. The most dramatic evidence is in Alaska, where average temperatures have increased more than twice as fast as the rest of the country. Of all the climate related changes in the U.S., the rapid decline of Arctic ice cover in the last decade may be the most striking of all. But the rest of the country is also experiencing visible shifts. In the Southwest, a combination of increased temperatures and reductions in annual precipitation are already affecting forests and diminishing water supplies. Meanwhile, the region's population continues to grow at double-digit rates, increasing the stress on water supplies. In other regions, the evidence of climate change is most obvious in ecosystem changes, such as species moving northwards, increases in invasive species and insect outbreaks, and changes in the length of the growing season. For other places, impacts to the urban environment are closely linked to the changing climate, with increased flooding, higher incidence of heat waves, and diminishing air quality. Finally, all regions with ocean coastlines are concerned about increasing sea levels threatening coastal areas and infrastructure.

These regional differences provide opportunities as well. A changing climate brings alterations in historical agricultural practices that can be beneficial if properly anticipated. Warmer winters mean reductions in heating costs for those in the northern portions of the country. Well-designed adaptation and mitigation actions, optimized appropriately for regional differences, can significantly enhance the nation's resilience in the face of multiple challenges that include many factors other than climate change.

The regions defined in this report intentionally follow state lines, but it's obvious that landscape features such as forests or mountain ranges do not follow these artificial boundaries, and the range of distinct landscapes within each region required difficult choices of emphasis for chapter authors. The chapters that follow provide a summary of changes that are observed and anticipated in each of the eight regions of the U.S., as well as on Oceans and Coasts.

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