

OVERVIEW

The Changing Southwest

“A near-doubling of population from 2000 to 2050 will increase already stressed water resources.”

Key Messages

1

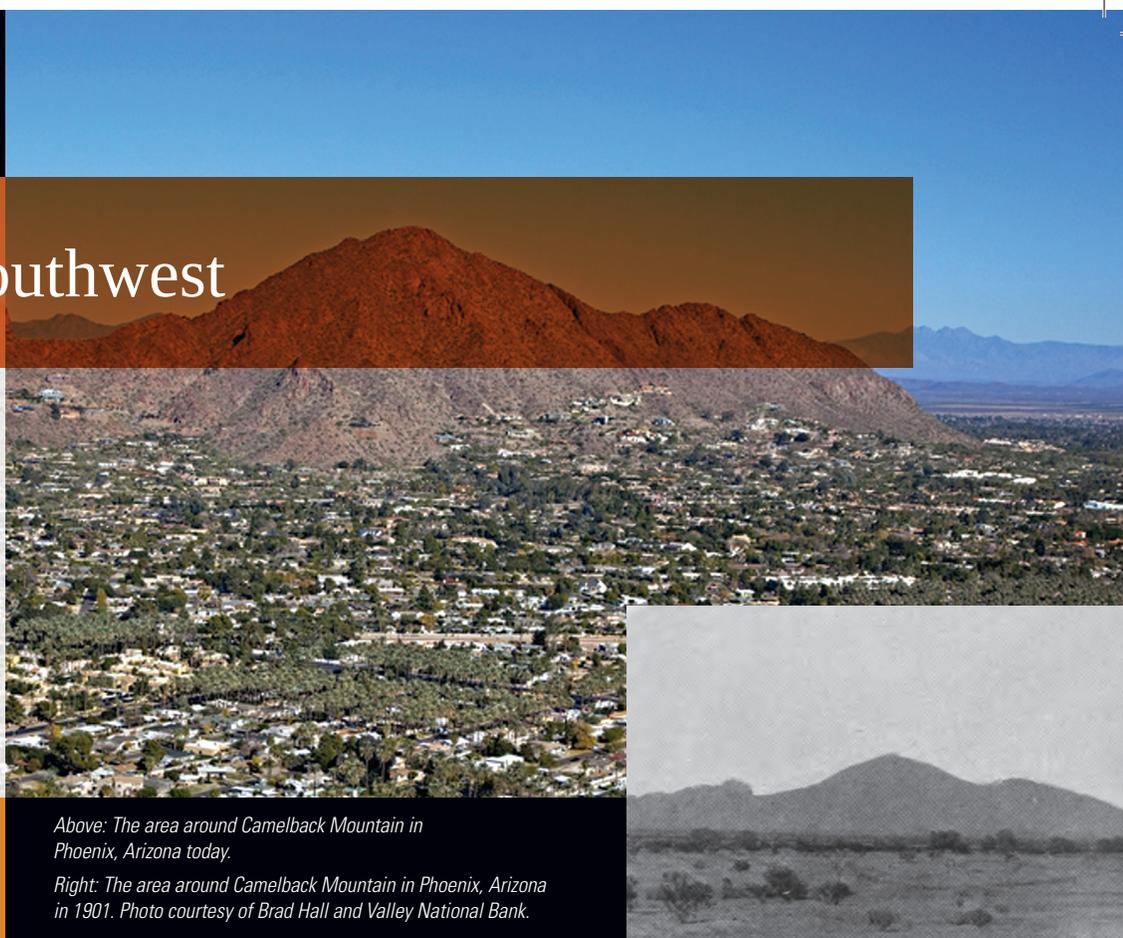
Potential adaptation of human and natural systems will face challenges due to a complex pattern of land ownership, which crosses political and management jurisdictions and transverses significant elevational gradients. This decreases the adaptive capacity of the region because it makes it more difficult to coordinate decision making across landscapes.

2

The region will likely grow by an additional 19 million people by 2030 (from 2010). This will make it more difficult to manage natural resources because of the additional demand for and reliance on natural resources (e.g., water supply).

3

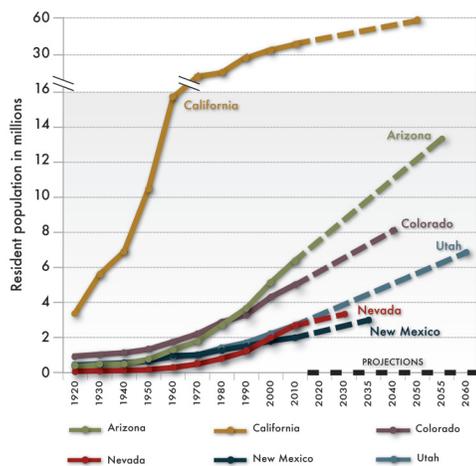
The coordination of climate-change adaptation strategies will be challenging because environmental management decisions will be made at many geographic scales, over different time frames, and by multiple agencies pursuing numerous associated policies and management goals.



Above: The area around Camelback Mountain in Phoenix, Arizona today.

Right: The area around Camelback Mountain in Phoenix, Arizona in 1901. Photo courtesy of Brad Hall and Valley National Bank.

The third chapter of the *Assessment of Climate Change in the Southwest United States* describes important geographical and socio-economic characteristics and trends—such as population and economic growth and changes in land ownership, land use, and land cover—that influence how climate change will likely affect the Southwest. “The Changing Southwest” also describes key laws and institutions that will affect adaptation and management of resources.



An additional 19 million people are projected to be living in the region by 2030.

Population

The Southwest has been the fastest-growing region of the nation for several decades, with Nevada, Arizona, Utah, and Colorado comprising the four fastest-growing states in the country. The Southwest grew by 37 percent, from 41.2 to 56.2 million residents, during 1990–2010, compared to a national growth rate of 24 percent. Most analysts expect the West, and especially the Southwest, to continue growing in population faster than the nation as a whole for the foreseeable future.

Economy

The Southwestern economy grew rapidly from the 1970s through 2008 (and began to decline with the recession). The strongest economic sectors were finance, insurance, real estate, and services, followed by construction and manufacturing, trade, and government. The more traditional natural resource economies (agriculture, ranching, fishing, hunting, and mining) remain important but provide only about 2.9 percent of the GDP of the region.

Geographical Features

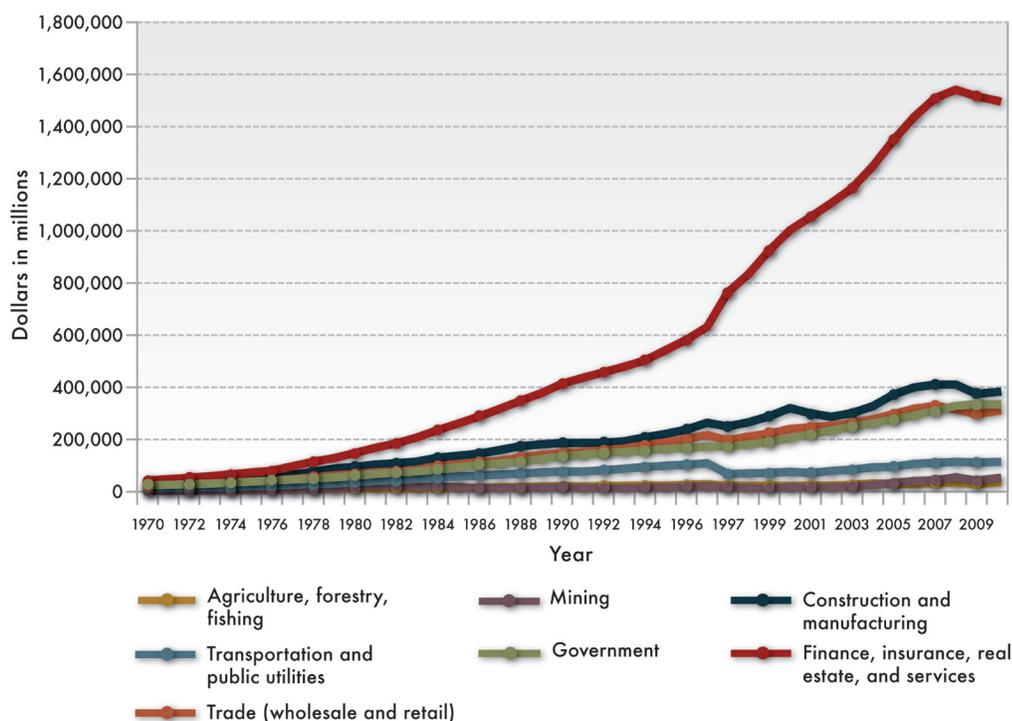
Two common geographical features tie the six southwest states (Arizona, California, Colorado, Nevada, New Mexico, and Utah) together. First, the states collectively span the most extensive arid and semi-arid climates and lands in the United States. Each state also touches and makes use of the waters of the Colorado River Basin. On the other hand, the region covering nearly 700,000 square miles, includes a variety of topography and landscapes, from the highest mountains in the continental United States (Mt. Whitney at 14,505 feet in California and Mt. Elbert at 14,440 feet in Colorado) to the lowest land point in the western hemisphere (Bad Water Basin in Death Valley at 282 feet below sea level).

The combination of mountains, valleys, plateaus, canyons, and plains increases the degree to which the region will be affected by climate change. For example, the higher elevations produce runoff that provides water resources to the drier valleys, piedmonts, and plains where most of the region's urban areas are located. As a result, important sources of water for many urban areas are often quite far away (Southern California partially relies on water from the Colorado River, for example). Aspects of the water resources system may be vulnerable, and not immediately apparent to urban dwellers.

Land Ownership & Management

Public lands, mostly federal, encompass 59 percent of the region's land surface. The federal lands are divided among agencies with different management mandates and goals: the Bureau of Land Management (BLM), Forest Service (USFS), National Park Service (NPS), and Fish and Wildlife Service (USFWS). A patchwork of federal laws governs resource management policies on these lands and each agency has efforts underway to plan for and adapt to climate change. The lands of Native nations occupy another 7 percent of the region. The patchwork of laws, policies, and regulatory agencies poses a significant challenge to coordinate adaptation to climate change. Relatively high levels of uncertainty associated with climate-model predictions create additional challenges. Adapting to climate change will require developing proactive strategies to anticipate change and to adaptively manage resources throughout changing circumstances.

Southwestern Economy Growth by Sector



Information from: Theobald, D. M., W. R. Travis, M. A. Drummond, and E. S. Gordon. 2013. "The Changing Southwest." In *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment*, edited by G. Garfin, A. Jardine, R. Merideth, M. Black, and S. LeRoy, 37–55. A report by the Southwest Climate Alliance. Washington, DC: Island Press.

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