

Scenario 1 Current Trends

In 2050, California's trends are those seen in the early part of the century. Population growth has grown to 60 million as projected by the Department of Finance, and development patterns have not changed. Irrigated crop lands continue to decline. Our economy is robust but with cyclical downturns. Human activity continues to jeopardize ecosystems while climate change is changing natural systems consistent with patterns forecast by IPCC and Climate Action Team (Middle Projections). Regional water management has improved, but California lacks statewide integration.

Natural System

Global climate change is affecting California's natural systems. Sea level rise has begun to disrupt ecosystems and communities in coastal areas and ongoing tidal wetland restoration. The biggest impact is in the Delta where levees protect low-lying lands, many which were already below sea level. Air temperatures have increased throughout the state, and precipitation patterns have become more variable. Loss of mountain snowpack is significant, and peak river flows occur earlier in the spring. Groundwater basins in regions that experience dry conditions are at risk to overdraft.

The state's aquatic systems continue to be jeopardized by human activity. Invasive species continue to be introduced and change the ecosystem. Pollution and salt accumulation impact California's surface water and groundwater bodies. Floodplains management initiatives have been moderately successful.

Cultural Practices

Consumers have shifted some to more sustainable resource concepts, partly out of economic necessity. Slightly more of us have shifted to high water efficiency appliances and landscaping practices. Patterns of residential development are similar to trends of the early century, but on smaller lots, reflecting the increasing cost of buildable land.

We continue a strong demand for recreational opportunities, including water-based recreation.

Economic and Financial

Population and land use

In 2050, nearly 60 million people live in California's urban areas. That accounts for almost the entire state population, which became increasing urban in 1900 and continued the trend into the 21st century. In 2000, the Census counted only about 6 percent as California's rural population.

The state's metropolitan areas have continued to grow, spreading boundaries and absorbing once-rural areas like the Sierra foothills. Limited and expensive land forced families to look for affordable homes in the state's interior valleys. Some industry staked operations within these suburban enclaves, but not enough. Commuters spend more time getting to and from work, partly because of choked roadways.

Still, Californians have not abandoned the mild-temperature coastal areas. The state's population growth in these areas has been more than twice that of any other state.

As water became more precious over the past 50 years with a 70 percent increase in population, some California communities adopted water-efficient land-use and landscaping principles. Although patterns of residential development continued, some tracts were built on smaller lots, reflecting the increasing cost of buildable land. Partly out of economic necessity, some consumers shifted to more sustainable resource concepts.

Land use planning also looked to reduce risk from California's floods, wildfires, and earthquakes. In 2050, some communities are less vulnerable to these catastrophic events because they were early adopters of helpful codes and regulations. Many older communities were built out and could not take advantage of new planning practices; others remain at risk because they will not change policies or continue to defer infrastructure maintenance.

Economy and Housing

Despite periodic downturns, California's economy remains robust. The state continues to be a leader in technology with increased employment in research and development. Average household incomes continue to rise; economic conditions for California tribes have improved at a modest rate.

Agriculture

Irrigated crop land has decreased in some areas where urban development and natural resource restoration have increased. Some agricultural lands remained in production with land conservation agreements and modest improvements to the Williamson Act. But overall, California's agriculture uses less land than it did 50 years ago. Despite this, California retains its role as world provider of agricultural products. Through a combination of advanced agricultural practices (e.g., multi-cropping) and technology, the agriculture industry has been able to increase the intensity of production as it also shifts to higher value permanent crops.

Water Quality, Supply, and Use

Significant water supply and quality challenges persist on local and regional scales. Water quality is generally good, but many areas face specific water quality problems. Many rural residents on small water systems or wells experience limited water supply as well as water quality impacts during droughts.

Water supply and water quality are inseparable in water management. Some areas of California continue to rely on over-pumping groundwater basins, which reduces long-term available water supply, increases pumping costs, and in some areas degrades groundwater quality. In many areas surface water and groundwater are impaired by natural and human-made contaminants that can threaten human health, degrade the natural environment, increase water treatment costs, and effectively reduce the available water supply.

Because there is a strong demand for recreational opportunities, including water-based recreation, many water supplies are tied to recreational use. This can affect water deliver reliability and increases the need for treatment and facility operation and maintenance.

Institutional and Political

In some ways, water planning and management has improved over the past 50 years: Communities are more open to recycling and participating in integrated regional water

management, but for many communities, institutional capacity is lacking for addressing potential supply shortfall and unsustainable groundwater use.

Water managers and the public continue to increase willingness to embrace water conservation, recycling, and system improvements. Additional water quality regulations control runoff from urban areas, agricultural lands, and timbered areas. Runoff also is a large source of our recycled water. The cost of providing clean and reliable water rises relative to the cost of energy and treatment. Citizens cope with rising prices by embracing water-efficient appliances and landscaping practices.

Divergent political views continue to stymie long-term improvements to the state's water management systems and ecosystem restoration. Funding has been targeted but, ultimately, insufficient. Despite the CALFED Ecosystem Restoration Program and Delta Vision initiative, the Sacramento-San Joaquin Delta's estuary remains vulnerable.

California's water planning and management integrates water supply and quality, flood protection, ecosystem restoration, climate change, and land use. Agencies share water management information and analysis, many through web-based technologies. Stakeholder participation in water management decisions continues to increase. California tribal governments continue to gain greater access to and participation in California's political system.

Technological

Water and energy are inherently linked, especially in California. Technology has modestly decreased energy use in water treatment and distribution, but they consume approximately 20 percent of the state's total electricity, 30 percent of the natural gas, and millions of gallons of diesel.

Water treatment technology allows more cost-effective clean up of groundwater and brackish water. Meanwhile, some advancement in residential appliances and irrigation technology has increased water use efficiency.