

Climate Literacy 101 Activity: “What should we do?”

North Coast Hydrologic Region



19,476 square miles

Average Annual Precipitation: 50.6”

2005 Population: 670,287

2050 Population Projection: 1,026,860

Total Reservoir Storage Capacity:
3,780 Thousand Acre Feet

2005 Irrigated Agriculture: 327,530 acres

The North Coast Hydrologic Region encompasses redwood forests, inland mountain valleys, and the semi-desert-like Modoc Plateau. Most of the region is mountainous and rugged. The mountain crests, which form the eastern boundary of the region, are about 6,000 feet elevation with a few peaks higher than 8,000 feet. This region records

some of the highest average rainfall rates statewide, with heavy rainfall in winter. About 425 miles of ocean shoreline form the western boundary of the region. All streams in the North Coast Hydrologic Region empty into the Pacific Ocean between Bodega Bay and Oregon. Most of the state’s Wild and Scenic rivers are within the North Coast region.

The North Coast region is generally rural, with a history of timber extraction. Ranching and fisheries contribute to the region’s economy. The region is largely unserved by the state and federal water projects.

As a small group activity, develop 5 effective mitigation or adaptation strategies for this hydrologic region, based on its geographic description and climate change information you learned in class today. Be prepared to share your reasoning with the group.

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Sacramento River Hydrologic Region



27,246 square miles

Average Annual Precipitation: 36.7”

2005 Population: 2,882,452

2050 Population Projection: 5,348,930

Total Reservoir Storage Capacity:
16,146 Thousand Acre Feet

2005 Irrigated Agriculture: 1,920,870 acres

The Sacramento River Hydrologic Region includes the entire drainage area of the state’s largest river and its tributaries, extending from the Oregon border downstream to the Sacramento-San Joaquin River Delta (the Delta). The many rivers and streams that are tributary to the Sacramento River provide important riparian

habitat that is critical for many aquatic and terrestrial species including the spring-run Chinook salmon, winter-run Chinook salmon, and Central Valley steelhead. The valley floor region adjoining the river provides some of the most important wintering areas along the Pacific Flyway for many varieties of waterfowl.

Agriculture is the region’s largest industry, contributing a wide variety of crops including rice, grain, tomatoes, field crops, fruits, and nuts. This region’s 2 million irrigated acres represent 1/5th of California’s irrigated acreage. The southern portion of the region has been experiencing rapid population growth and urbanization. The major reservoirs for the state and federal water projects are in this watershed; Shasta reservoir holds 4.5 MAF for the CVP; Lake Oroville holds 3.5 MAF for the SWP.

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Mountain Counties Hydrologic Region



15,758 square miles

Average Annual Precipitation: 42.7"

2005 Population: 582,654

2050 Population Projection: 1,010,755

Total Reservoir Storage Capacity:
18,185 Thousand Acre Feet

2005 Irrigated Agriculture: 104,110 acres

The Mountain Counties Area of California includes the foothills and mountains of the western slope of the Sierra Nevada and a portion of the Cascade Range. Elevations vary from around 100 feet near the edge of the valley floor to nearly 14,000 feet at peaks along the crest of the southern Sierra Nevada. These watersheds

account for about a quarter of all natural river runoff in California and over half of all snowmelt runoff in the state. The region is heavily forested.

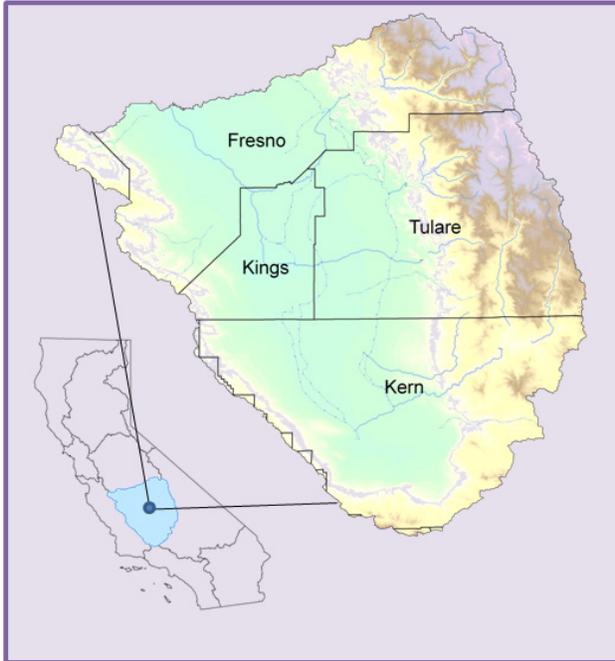
Since 1850, increasingly intense settlement and resource use has transformed portions of the Sierra, especially due to mining, grazing, timber harvest, and water development. The National Forest Service controls more than 10 million acres in the region. About 2 percent of the state’s population live in the area, and recreational use of the extensive public lands has increased in recent decades.

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Tulare Lake Hydrologic Region



17,033 square miles

Average Annual Precipitation: 15.2”

2005 Population: 2,098,631

2050 Population Projection: 5,194,490

Total Reservoir Storage Capacity:
2,046 Thousand Acre Feet

2005 Irrigated Agriculture: 3,128,100 acres

The Tulare Lake region once contained the largest single block of wetland habitat, providing habitat for millions of migrant waterfowl and shorebirds. Today, these areas are intensively farmed. The Tulare Lake Hydrologic Region is one of the nation’s leading agricultural production areas, growing a wide variety of crops on about 3 million

irrigated acres, of approximately 10 million irrigated acres in California. Agricultural production has been a mainstay of the region since the late 1800s.

The California Aqueduct extends the entire length of the west side of the region, delivering water to State Water Project (SWP) and Central Valley Project (CVP) contractors and exporting water over the Tehachapi Mountains to Southern California. Along the eastern edge of the valley, the Friant-Kern Canal is used to divert San Joaquin River water from Millerton Lake for delivery to agencies extending into Kern County. All of the Tulare Lake region’s streams are diverted for irrigation or other purposes, except in the wettest years. Historically, they drained into Tulare Lake, Kern Lake, or adjacent Buena Vista Lake, as the lower San Joaquin Valley is an enclosed basin and has no natural drain.

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South Coast Hydrologic Region



10,925 square miles

Average Annual Precipitation: 17.6”

2005 Population: 19,638,116

2050 Population Projection: 27,106,340

Total Reservoir Storage Capacity:
3,059 Thousand Acre Feet

2005 Irrigated Agriculture: 242,210 acres

The South Coast Hydrologic Region is California’s most urbanized and populous region, including the cities of Los Angeles and San Diego. More than half of the state’s population resides in the region (54 percent), which covers 11,000 square miles or 7 percent of the state’s total land. The economy of Los Angeles is driven by international

trade, entertainment, aerospace, technology, petroleum, fashion, apparel, and tourism. The contiguous ports of Los Angeles and Long Beach together comprise the fifth-busiest port in the world.

There are 19 major rivers and watersheds in the South Coast region. Many river segments on the coastal plain, however, have been concrete-lined and in other ways modified for flood control operations. Many of these watersheds have densely urbanized lowlands with concrete-lined channels and dams controlling floodflows. The headwaters for many rivers, however, are within coastal mountain ranges and have remained largely undeveloped. The City of Los Angeles built the L.A. Aquaduct to import water from Mono Lake and the Owens Valley, in the eastern Sierra Nevada. Additional water supply for the region also comes from the State Water Project (SWP) and the Colorado River.

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